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**PATHOLOGICAL AND SURGICAL OBSERVATIONS RELATING TO INJURIES OF THE BRAIN.** By B. C. BRODIE, F.R.S. and Surgeon to St. George's Hospital.

PART I.

*Read 26th Feb., 11th and 25th March, 1828.*

SECT. 1.

It is my intention in the following pages to lay before the Society some observations relating to injuries of the brain, and the treatment which these injuries require. If any apology be necessary for this undertaking, I may remark, that I have been led to it by the great importance of the subject, and also by this consideration, that although much information may lie, as it were, scattered throughout the mass of surgical literature, no practical writer, as far as I know, has attempted to make such a collection and arrangement of facts as will enable the surgical student to take a distinct and connected view of all the parts of this curious and interesting inquiry. The present paper contains only a part of the observations which I have to offer, namely, those which relate to the first or immediate consequences of the injury. Should these be favourably received, I shall venture, on a future occasion, to communicate to the Society a second series of observations relating to those more remote consequences which are connected with inflammation of the brain and its membranes, or which arise after inflammation has subsided.

SECT. 2.—*Immediate Effects of Injuries of the Head as indicated by Dissection.*

In treating of injuries of the brain, of course I mean to include the consideration, not only of those by which the brain is affected in a direct, but also of those by which it is affected in an indirect, manner. Wounds and contusions of the external parts of the head demand our attention, inasmuch as they may be, and not unfrequently are, followed by disease of the more important parts contained within. Among the effects produced we are to distinguish those which are the immediate result of the injury, and those which are to be attribut-

ed to inflammation and its consequences. In the former we are still further to distinguish the actual derangement or destruction of the natural organization, such as it is disclosed by dissection, and the symptoms produced during the life of the patient by the disturbance of the functions of the injured organ; attempting at the same time to view these two orders of facts in connexion with each other, as the method by which, on this as well as on other occasions, we may be the best enabled to found the practical art of surgery on the basis of a scientific pathology.

The appearances which are observable on dissection in a person, who dies soon after an injury of the head, are very various, and may be variously complicated; but they admit of being classed under the following heads:

1. There may be simple contusion of the scalp with extravasation of blood between it and the tendon of the occipito-frontalis muscle, or between the latter and the pericranium, or between the pericranium and the bone; concerning which it is scarcely necessary to repeat the observation of Mr. Pott as to the close resemblance of the impression which is given to the fingers by the margin of the mass of extravasated blood, and that of depressed bone.

2. The scalp may be lacerated so as to expose the surface of the pericranium, or the pericranium itself may be torn off with it so as to expose the surface of the bone. Of these injuries, however slight may be the apparent difference between them, the latter is, as I shall show hereafter, likely to produce much more serious consequences than the former.

3. If a blow be inflicted on the head of the dead subject, the small vessels which connect the dura mater to the inside of the bone, at the part where the blow is inflicted, become ruptured; and in consequence the dura mater is separated from the bone to a greater or less extent. This, which happens in the dead body, may happen in the living body also, and is not an unfrequent consequence of an injury of the head. The separation of the dura mater is sometimes very extensive. A boy twelve years of age, fell from a height of fifty feet, and struck his forehead against the ground. He was admitted into St. George's Hospital in a state of stupor, in which he lay

for three days, when he died. On dissection, besides a large extravasation of blood on the inferior surface of the brain, the dura mater was found to have lost its adhesion to the bone everywhere, except in the basis of the cranium, and the external surface of that membrane had a brown and sloughy appearance.

4. The cranium may be fractured in all varieties of ways, from the most simple fissure to the most complicated fracture accompanied with depression and extending in a number of directions. A fracture in most instances takes place in the upper part of the cranium. Fractures of the basis are always the consequence of very severe contusion, and recoveries from these accidents are comparatively rare, not because a fracture of the basis is in itself more dangerous than a fracture elsewhere, but because it is almost invariably complicated with extensive injury of other and more important parts.

A fracture generally occurs in that part of the cranium on which the blow has been inflicted. But we find that in cases of fracture of other bones, the fracture is often situated at some distance from the part which is immediately exposed to the shock of the injury, as when the fibula is broken a little above the outer ankle in consequence of the foot having been twisted outwards, or the ribs are broken in the side in consequence of a blow on the sternum; and some French writers have supposed that fractures of the cranium occur in the same manner, being produced by what they have denominated the *contre-coup*.

It has been observed to me, however, by Mr. Earle, that he has not known a fracture of this kind to take place except where the blow seems to have operated in such a manner as to impel the occiput forcibly against the atlas, the line of fracture passing through the former bone, where it rests on the latter. My own experience corresponds very nearly with that of Mr. Earle. The only well marked cases of fracture of the cranium, in which the fracture could be attributed to the effects of the *contre-coup*, which have fallen under my own observation, were similar to those which he has mentioned. I do not, however, mean to assert, that such fractures absolutely never occur independent of the re-action of the atlas. Among the cases recorded in the Prize Memoirs of the French Academy of Surgery there are some which show that the thing does happen,\* and Mr. Bell has offered

\* For example, M. Saucerote quotes from *Joan. Bonhiius de Renunt. Vulnerum* the following history. A man died after having received a blow above the right eyebrow. On dissection it was ascertained that there was no fracture in the part which had been struck, but in the right orbit there was a fracture half an inch in length, extending towards the *Sella Turcica* of the sphenoid bone. But with respect to many other cases which are mentioned in the same memoir, it may be said that there is no sufficient evidence that the fracture which was attributed to the counter-

an ingenious and scientific explanation of the mode in which it happens. It is, however, worthy of remark, that the only two cases which Mr. Bell has adduced in illustration of what he has advanced, are those in which the fracture extended across the occiput, in one case passing through, and in the other case passing close to, the foramen magnum of that bone.

In all cases of fracture of the cranium, with depression of bone, it is of importance to observe that the division of the inner does not correspond to that of the outer table of the skull, the former being always broken to a greater extent than the latter. In consequence of this the actual depression is greater than it would appear to be from the mere inspection of the external fracture.

I have seen a case in which there was a fracture with distinct depression of the inner table, while there was a simple fissure which was scarcely perceptible, and that without the smallest depression, of the outer table. But more remarkable instances of the kind are recorded by authors. M. Saucerote,\* in the Prize Memoirs of the French Academy, quotes a case from Tulpus, in which there were extensive fissures of the inner table of the skull, although the outer table remained uninjured; and another from Parey, in which, while the outer table was entire, the inner table was broken into splinters, some of which were actually driven into the substance of the brain. Dr. Hennen also in his Treatise on Military Surgery,† gives an account of a case similar to the last, in which the inner table was splintered, and at one part driven more than half an inch into the membranes of the brain, although there was not even a fissure of the outer table. The greater elasticity of the outer table of the skull, and the greater brittleness of the inner table seem to afford the only reasonable solution of these phenomena.

5. In young children we sometimes find the cranium depressed or indented after a blow on the head, and in the course of a few days restored to its natural level without the aid of a surgeon. I suppose that in these cases the earthy part of the bone has given way, while the animal part has remained entire, so that there has not been a complete fracture or actual solution of continuity, and that the pulsations of the brain constantly operating against the inner surface of the bone have been the means of elevating the depression. I have had no opportunity of verifying or contradicting this opinion by dissection, but it corresponds to what we know to happen in cases of injury done to other bones during the period of childhood.

6. The disjunction of the sutures is much more rare than fractures of the cranium. It is evident that this cannot happen except in

stroke, did not really arise from a second blow on another part of the head.

\* Vol. IV. 8vo. edition, 1819, p. 322.

† P. 323, second edition.



those who are not much advanced in life, and in whom the sutures are not completely consolidated. Such a case is always to be regarded as one of peculiar danger, not so much because the disjunction of the sutures is in itself likely to lead to bad consequences, but because the force necessary to produce it is so great, that it is also likely to produce extensive and serious injury of other parts.

7. Extravasations of blood within the cranium, in consequence of a blow on the head, occur in various situations: 1st, between the bone and dura mater, and here the extravasation may arise from a rupture of the small blood-vessels by which the dura mater is connected to the bone, or from a laceration of the trunk or branches of the middle meningeal artery. There is however never any considerable hemorrhage from the former source. At least, all the experience which I have had on the subject tends to confirm the opinion advanced long ago by Mr. Abernethy, that blood is never poured out in such quantity as to produce a dangerous pressure on the brain, except where the middle meningeal artery has been lacerated, and from this vessel the hemorrhage is sometimes very copious. I do not recollect to have seen it lacerated, except in combination with fracture running across the bony canal in which it is lodged; cases are however recorded by authors, in which the artery has been opened into, and bleeding has taken place from it, independently of fracture.\* 2dly, there may be extravasations of blood within the dura mater, and here the blood is generally collected between the dura mater and the tunica arachnoides. Sometimes, however, but rarely, the blood occupies the ventricles; at other times we find it extravasated in the substance of the brain, or in the cells of the cellular texture by which the tunica arachnoides and pia mater are connected with each other. Large extravasations are sometimes found on the upper surface of the brain, but more frequently on its basis. In the latter situation, the hemorrhage is usually the consequence of a rupture of the substance of the brain. As a blow on the abdomen may lacerate the substance of the liver or spleen, and occasion hemorrhage into the peritoneal cavity, so may a blow on the head cause a rupture of the tender substance of the cerebrum or cerebellum, and hemorrhage into the cavity of the dura mater. These cases generally afford examples of the *contre-coup*. The rupture of the brain rarely takes place at the exact spot at which the blow is inflicted; and the great irregularities which exist on the inner surface of the basis of the cranium, sufficiently explain wherefore the inferior is more liable to be ruptured than the superior surface of the brain.

Wounds of the sinuses sometimes bleed profusely where there is a free opening in the bone made by accident or operation, through

which the blood can readily escape. But a very slight pressure is adequate to the suppression of this as well as of other venous hemorrhage; and I have never known an instance in which there was such a collection of blood as was capable of interfering with the functions of the brain, between the dura mater and the bone, or between the dura mater and the brain, in consequence of a wounded sinus. There is often a considerable effusion of blood from the ear, especially in cases of fracture of the basis of the cranium. This may, as far as I know, sometimes arise from other sources; but it seems probable that it must, in most instances, arise from the laceration of the lateral sinus, where it extends downwards behind the petrous process of the temporal bone and the external meatus; and in one instance I ascertained it to have been so by the examination of the body after death. In another case which fell under my observation, there was hemorrhage from both the ear and the nostrils. The patient, a boy, died shortly after the accident; and it was found on dissection that there was a fracture of the base of the cranium, with laceration of the cavernous sinus, and that the hemorrhage had taken place from this sinus.

7. There may be all descriptions of wounds of the brain and its membranes, punctured, incised, and lacerated, with or without loss of substance: and with these, the effects of contusion which have been already enumerated, may be variously combined.

### SECT. 3.—*Concussion of the Brain.*

It is evident that many of those consequences of an injury of the head which are disclosed to us by dissection, are not likely to be marked by any peculiar symptoms in the living person, at least not previous to the access of inflammation. Wounds and lacerations of the brain, and compression of the brain, whether it arise from extravasated blood or a depression of bone, may impair or destroy the functions of that organ; but neither simple fissures of the cranium, nor disjunction of the sutures, nor separation of the pericranium or dura mater, are in themselves adequate to produce such effects in the first instance, although they may lay the foundation of serious disease afterwards.

But it has been long since established by the investigations of surgeons, that another cause, besides those which are rendered manifest by dissection, may be concerned in producing the symptoms which immediately follow a contusion of the head. A man receives a blow on the head; he becomes insensible, and continues so for a few minutes or for several hours. He dies, in consequence of this or some other injury; and on examination after death, the brain and its coverings appear to be perfect in all their parts; so that the most accurate anatomist can discover nothing different from the natural appearance of these organs. Opportunities of verifying this observation occur more or less to all those who have had much experience in their profession.

\* Two such cases are quoted by Mr. Abernethy, one from Mr. Hill, and the other from Mr. Latta.

In such cases, the patient is said to have been stunned, or to have suffered from concussion of the brain: and it is to one of these three causes, namely, concussion, compression, and wounds of the brain, that the symptoms which immediately follow an injury of the head, and which are antecedent to those produced by inflammation, are to be referred.

Opportunities of inspecting the brain, where the patient has laboured under symptoms of concussion, may arise, 1st, where the concussion has so disturbed the functions of that organ as to have been in itself a cause of death (which is, on the whole, a rare occurrence.) 2dly, where the concussion of the brain has been complicated with other and still more serious mischief. We learn from such examinations, that the symptoms which are ascribed to concussion do not depend on any such derangement of the organization as admits of being disclosed to us by dissection. The brain appears to retain its natural structure unimpaired. We are not however justified in the conclusion that there is therefore in reality no organic injury. It is difficult to conceive in what other manner concussion of the brain can operate so as to produce the effects which it is known to produce; and if we consider that the ultimate structure of the brain is on so minute a scale that our senses are incapable of detecting it, it is evident that there may be changes and alterations of structure, which our senses are incapable of detecting also. The speedy subsiding of the symptoms of concussion does not contradict this opinion. A deep incised wound in other parts of the body may, under certain circumstances, be completely and firmly united in the space of twenty-four hours; and it is easy to suppose that the effects of a much slighter injury may be repaired in a still shorter space of time.

The disturbance of the functions of the brain, which is the consequence of concussion may exist in various degrees and may be of various duration.

In many instances there is at first complete insensibility to external impressions. The patient lies as if in a state of apoplexy, from which however he recovers in the course of a few minutes. In some instances the recovery is complete; the patient rises and walks away as if nothing unusual had occurred. In other cases this state of total insensibility is followed by one in which the sensibility is impaired, but not destroyed. The patient is not affected by ordinary impressions, but if spoken to in a loud tone of voice, he will shift his position, and answer in a peevish manner. Sometimes he is in a state of imperfect delirium, talking in an incoherent and rambling manner, as if intoxicated. The pupils contract on exposure to light, and are sometimes more contracted than under ordinary circumstances. There is no paralysis. The respiration in the great majority of cases is performed easily and naturally; in a few instances only it is laboured, and approaching to being stertorous. These symptoms may wholly subside in the

course of a few hours or they may continue for three or four days. In the latter case it frequently occurs that the patient regains his sensibility for a time, and then relapses into his former condition. Where inflammation of the brain follows the injury done by concussion, it may be that the primary effects of the concussion are entirely relieved, so that there is a considerable interval of sense before the inflammation shows itself. But it may be also that there is no such interval, and the symptoms of concussion, in this last case, are gradually and imperceptibly converted into those of inflammation.

Concussion of the brain in almost every instance occasions headache; sometimes a slight headache, which is speedily relieved; at other times an intense headache, which may remain for some days, a solitary symptom, after all other symptoms are vanished. Sickness and vomiting for the most part are early symptoms, and seldom continue after the patient has recovered from the first shock of the accident. Of course there is no recollection afterwards of what occurred during the period of complete insensibility. The memory however is sometimes affected to a still greater extent; and the impressions made on the mind by the events immediately antecedent to the injury become obliterated. A groom in the employment of the Persian ambassador, in the summer of 1819, was engaged in cleaning one of the ambassador's horses, when he received a kick from the animal on the head. He did not fall, nor was he actually insensible or stunned; but he entirely forgot in what employment he had been engaged at the time of receiving the blow. Being unable to account for the time which had elapsed, he concluded that he had been asleep: said so to his fellow-servants, observing at the same time that "he must set to work to clean the horse, which he ought to have done before instead of going to sleep." A boy going down into the hold of a ship fell from a considerable height, and struck his head. He lay insensible, as it appeared from the observation of his shipmates, about half an hour, when he came upon deck without any assistance. Nevertheless on the following day all the circumstances of the accident had passed from his memory. Some time afterwards when he was received into St. George's Hospital, I found that he knew nothing of the accident except from the report of others. He had not only entirely forgotten the accident itself, but he did not even remember his having gone down into the hold of the vessel before the accident, nor his having come upon deck afterwards: and he never regained his recollection on these points. Desault mentions the case of a man, who, after a blow on the head, at first had no recollection except of recent events: but afterwards a change took place, in consequence of which his memory failed him as to recent events, while he could remember those which had occurred in childhood.

A number of circumstances which it is unnecessary to enumerate, as every physiologist



is well acquainted with them, tend to show that the influence of the brain is by no means necessary to the action of the heart: which may, under certain circumstances, continue uninterrupted, even after the entire removal of the head. Nevertheless, in cases of concussion of the brain, we generally find the circulation more or less affected; the pulse intermitting, irregular, feeble, perhaps scarcely perceptible, and the patient in a state approaching to that of syncope; and such may be his condition for a few minutes, or for the first four or five hours after the infliction of the injury. The connexion and sympathy which exist between the different parts of the nervous system, afford a reasonable explanation of this apparent anomaly, which, however remarkable it may be, is not more remarkable than the syncope which not unfrequently follows the first introduction of a bougie into the urethra, or that which is the consequence of many other trifling injuries of parts remote from the centre of the circulation, and exercising no direct influence over the functions of the heart.

In those cases in which concussion proves fatal it appears to be this disturbance of the heart's action which is the immediate cause of death. In general when the patient has lain for some time in the state which has been described, a re-action of the circulating system takes place, and the pulse beats with greater strength in proportion as the failure of it was greater in the first instance. But where the shock has been unusually severe there is no such reaction. The pulse becomes more and more feeble, more irregular and intermittent; the extremities grow cold, and at last the action of the heart being altogether suspended, the patient expires. In some cases, even after re-action has begun to take place, it seems as if the constitution was unequal to the effort: there is another failure of the circulation, the result of which is the same as if the patient had never rallied from the beginning.

#### SECT. 4.—*Compression of the Brain.*

If the dimensions of the cavity of the cranium be suddenly diminished, as in a case of fracture with depression of bone, or if the actual quantity of the contents of the cranium be increased, as in a case of ruptured vessel and extravasation of blood, the functions of the brain become impaired. This is a matter of experience and observation, about which there is no dispute. There may be, however, some difference of opinion as to the physiological explanation of the phenomena which arise in such cases. It has been usually held that the substance of the brain is actually compressed; but Mr. Bell observes very truly that we have no more right to believe that the substance of the brain admits of being compressed, than that water is compressible; and he infers, that what is called compression of the brain, operates not on the substance of the brain itself, but simply on its blood-vessels; lessening their diameter, and thus preventing that due supply of scarlet arterial blood which is necessary

to a due performance of the vital functions. It is evident indeed that the effect which compression of the brain produces on its vessels must be to a greater or less extent such as Mr. Bell has described it to be. It may, however, be urged on the other hand, first, that in some cases symptoms similar to those which arise from compression, take place where there is a preternatural determination of blood to the head; where the vessels instead of being empty are actually overloaded; and that in these cases the symptoms are relieved by drawing blood from the jugular vein, or from the veins of the arm; as if the pressure occasioned by too much blood in the vessels was productive of nearly the same effects on the brain, with that arising from blood in a state of extravasation: secondly, that, although we admit the substance of the brain to be incapable of being compressed into a smaller compass, yet that the effect of all pressure on it must be, and is, to alter the position and relative situation of the delicate fibres of which its minute structure is composed, and that we need seek no further explanation of the symptoms which are met with in these cases.

In whatever way compression of the brain operates so as to disturb the functions of that organ, it is difficult to explain wherefore the symptoms to which it gives rise are sometimes slight, and at other times urgent, although occurring under circumstances apparently similar. A depression of bone, which in one instance produces comparatively little effect, in another case occasions a manifest destruction of sensibility: and the same observation may be made respecting internal extravasations of blood. Every practical surgeon must have observed that there are differences in the symptoms produced, which are not to be accounted for by any difference in the quantity of pressure, nor in the particular part of the brain which is affected by it. At the same time it is undoubtedly true, that, for the most part, the patient suffers more from an extensive than from a slight depression; more from a large than from a small extravasation. There is reason to believe that pressure is on the whole more dangerous when it affects the lower part of the brain, than when it affects the upper part; and it has appeared to me that more urgent symptoms are produced by a given quantity of blood, when it is effused into the cells between the tunica arachnoides and pia mater, than when it is collected in one mass so as to produce a less general pressure.

Having made these preliminary observations, I shall proceed to consider the particular symptoms which arise from pressure on the brain.

1. *Pain in the head:*—The blow which occasions a fracture and depression of the cranium, or an extravasation of blood within the cranium, is likely to produce concussion of the brain also, and as pain in the head is a symptom of the latter injury, it may be a question, in many instances, to which of these two causes it is to be attributed. That intense

pain in the head may, however, be wholly dependent on pressure on the brain is proved by a case in which a patient under my care laboured under this symptom, and no other, except indeed that the pupil of one eye was preternaturally dilated. There was a fracture with depression of a very small portion of one parietal bone, and immediately on the depression being elevated, the pain in the head was completely relieved.

2. *Insensibility*:—which is sometimes incomplete, corresponding to what is observed in cases of concussion of the brain; the patient lying for the most part unconscious of what passes around him, but capable of being roused by stronger impressions on his senses; while at other times the loss of sense is perfect, so that the skin may be pinched, the flame of a candle may be held close to the eye, and the loudest voice may be uttered in the ear, without any evident effect being produced on the sensorium. Where the cause of these symptoms is a fracture and depression of bone, they show themselves immediately after the infliction of the injury; but where they depend on an extravasation of blood, as, in many instances, the extravasation may take place slowly, so an interval of time, an hour for example, may elapse before the patient becomes insensible. Not unfrequently there is insensibility, from concussion of the brain in the first instance; then the patient recovers, and afterwards, as the blood is gradually effused within the cranium, he relapses into his former state of insensibility. These observations were made first by Le Dran, and afterwards by Mr. Pott, and it is needless to remark how great is their importance, as connected with the diagnosis of these different kinds of injury. But even when pressure on the brain is actually established, the insensibility to which it gives rise is liable to some degree of variation. At one time it may be perfect; then the patient may show some signs of consciousness, and then relapse into a state of perfect stupor. It may be observed, that there is especially an increase of sensibility after blood-letting, and that as the effect, which the loss of blood has produced on the circulation, subsides, so the sensibility becomes again diminished.

If these observations be correct, it is evident that there is not any such difference in the character of the insensibility produced by concussion, and that produced by compression of the brain, as will enable us at once, in all cases, to distinguish these two kinds of injury from each other. Those who are led to take a different view of the subject, may indeed urge, that in some cases there is considerable pressure on the brain, without any symptoms at all; and that when, in a case of fracture, and depression of the cranium, or extravasation of blood within the cranium, the patient lies with a partial loss of sense, this is to be attributed not to the actual pressure, but to the concussion of the brain, which the violence inflicted must necessarily have occasioned in a greater or less degree. I might however refer to several cases, to which this explanation

cannot be well applied; but a single example will be sufficient. A woman received a blow on the head; after which she was able to walk home, complaining that her head was hurt, and that she had received her death blow. In an hour after the accident, she gradually became insensible. About fourteen hours afterwards she was brought to St. George's Hospital, labouring under symptoms precisely corresponding to those which have been described by Mr. Abernethy, as arising from concussion. These symptoms continued, and even rather abated than increased, until the third day, when an aggravation of them took place, and she expired. On examining the body, eight ounces of blood were found effused underneath the dura mater. The circumstance of there having been no loss of sense in the first instance, and the interval of an hour which elapsed between the period of the accident and that of the occurrence of the symptoms, sufficiently demonstrate that they were the consequence of pressure produced by the hemorrhage, and not of the concussion.

It sometimes happens, that there is a destruction of sensibility in one part of the system, while the general sensibility is impaired only in a slight degree. An old man was admitted into St. George's Hospital, who had been run over by a cart. There was a fracture with depression of one parietal bone. He was sensible, but slow in giving answers, and peevish, and it was observed that he was totally blind. Mr. Gunning removed a portion of the parietal bone with the trephine, and elevated the depression; but the operation produced no change in the symptoms. About thirty-six hours after the accident, the pulse became frequent, and he was delirious. He remained entirely deprived of the faculty of vision; believing that he saw imaginary objects, but totally unconscious of the existence of those which were actually before his eyes. At the expiration of the fifth day he died. On examining the body, the membranes of the brain were found to be inflamed, and smeared with pus and lymph. In the basis of the cranium, there was a transverse fracture extending across the sphenoidal bone, and the fractured edges were displaced in such a manner as to press on the optic nerves immediately behind the orbits, and to explain, in the most satisfactory way, the total loss of sight. Such cases as that which follows, are not very uncommon. A gentleman was thrown from his horse, and received a blow on the head. He lay with well-marked symptoms of compression of the brain, which however began to subside in a few days. In a short time, his general sensibility was completely restored, but there was a numbness, or loss of sensation, of one hand for more than a year afterwards.

3. *Paralysis*:—Here, as on other occasions, the same cause which prevents the brain receiving impressions from the nerves, prevents it also transmitting its influence through the nerves to the muscles. Where the destruction of sensibility is complete, the voluntary muscles are completely paralyzed. In whatever



position the patient may be placed, in that he remains motionless. The bladder, incapable of contraction, becomes preternaturally distended with urine; and the relaxation of the sphincter ani allows the involuntary discharge of fæces from the rectum. Afterwards the muscles of respiration become affected also; the patient breathes with stertor, as in a most profound sleep; and the diaphragm contracts at longer and longer intervals, until respiration altogether ceases. It is this paralysis of the muscles of respiration, which in ordinary cases of pressure on the brain is the immediate cause of death. Where there is an imperfect loss of sense, there are often no marks of paralysis whatever. At other times there is paralysis of one side of the body, while the muscles of the other side, continue to obey the will as usual; and sometimes the paralysis is permanent. Dr. Hennen\* gives an account of a patient who recovered with life from the effects of a fracture and depression of the left parietal, and left side of the frontal bone; but fourteen years afterwards, he was still paralytic in the opposite arm and leg.

Hemiplegia is however a much more rare occurrence where pressure on the brain is the consequence of accidental violence, than it is in cases of apoplexy from a spontaneous rupture of a blood-vessel. The difference may reasonably be attributed to the different situation of the pressure. In cases of apoplexy, the extravasation is for the most part situated either in one of the ventricles, or in the substance of the brain; but after a blow on the head, the cause of pressure more commonly operates on the surface. Occasionally the paralysis is confined to one set of muscles, or even to a single muscle. There may be, for example, loss of motion in one hand, or a *ptosis*, or dropping down of one upper eyelid. In cases of hemiplegia after an injury of the head, the paralysis is on the side opposite to that on which the pressure exists: at least I have never met with an exception to this general rule. The observation, however, does not apply to more partial paralytic affections. A young gentleman fell from a coach-box, and struck the left side of his head against the wheel of the carriage: he was not stunned, but there was an ecchymosis of the left cheek and temple, a copious discharge of blood from the left ear, and the muscles of the left side of the face were rendered paralytic. When he laughed, the mouth was distorted to the right side; and he was unable to close the left eyelids. The loss of power over the muscles was not attended with any loss of sensation, and was not permanent, the recovery of the patient being complete in about three months. It seems reasonable to conclude that in this case the cause of the paralysis was pressure produced by the extravasation of blood on the portio dura of the nerve of the seventh pair, by which the muscles of the face are supplied, and not on the brain itself. In like manner I

have known *auphosis* of the *left* upper eyelid connected with pressure on the inferior surface of the *left* hemisphere of the cerebrum, the pressure being so situated as to affect the nerve of the third pair immediately behind the left cavernous sinus.

4. *Convulsive actions of the muscles*:—Where there is paralysis of one side of the body after an injury of the head, we sometimes observe convulsive twitches of those of the other side. But it appears to me to admit of a question whether this symptom ought to be regarded as the consequence of simple pressure on the brain. We find it occur in cases of punctured and wounded brain, where there is no pressure; and it so happens, where it has fallen under my observation in cases of depression of bone or extravasated blood, and where the exact nature of the injury was afterwards ascertained, that the pressure has been always found to be complicated with wound or laceration of the substance of the brain.

The convulsive twitches to which I here allude are slight and only partial, and are to be distinguished from those violent fits of general convulsions on which I shall have to offer some observations hereafter.

5. *Affections of the pupils*:—The state of the pupils varies very much in cases of pressure on the brain even under circumstances apparently similar. I have seen the pupils dilate with the absence, and contract with the presence of light, although the patient lay in a state of complete insensibility, and did not seem to be at all conscious of the impressions made on the retina. But this is a rare occurrence, and for the most part where the other symptoms of pressure are present, the pupils are insensible and motionless; being generally dilated, but sometimes contracted. It is not uncommon for the pupils to remain for a time in a state of dilatation, then to become suddenly contracted, and after remaining so for a longer or shorter time, to become again dilated, these changes taking place independently of light and darkness. I have observed especially, where the pupils have been dilated, that they have frequently become contracted immediately after the abstraction of blood; the dilatation returning as soon as the immediate effect of the blood-letting on the circulation has ceased. Dr. Hennen mentions a case in which blood was extravasated among the membranes of the brain, and in which the pupils were observed sometimes to become dilated with an increase, and to contract with a diminution of light. In a patient in St. George's Hospital, in whom there was an extravasation of blood on the upper part of the right hemisphere of the cerebrum, and no cause of pressure elsewhere, both pupils were insensible and motionless; but the right pupil was in a state of dilatation, and the left in a state of contraction. In another patient, in whom there was fracture and depression of the left parietal bone, the left pupil was permanently dilated, the right pupil being in a natural state. In a third case, in which there was a fracture and depression of the frontal

\* Military Surgery, p. 304.

bone above the right superciliary ridge, there was a dilatation of the pupil of the left eye; and again, in a fourth case, where there was a fracture and depression in the same situation as in the case last mentioned, and no cause of pressure elsewhere, both pupils were dilated and equally insensible, but immediately regained their sensibility and power of contraction on the depression being elevated.

As there may be general insensibility without the pupils being insensible to light, so there may be insensibility of one of the pupils without general insensibility, and even without loss of vision. A gentleman fell from his horse, received a severe contusion of the head, and was taken home, labouring under manifest symptoms of pressure on the brain. When, after the lapse of several days, these symptoms became somewhat abated, it was observed that the pupil of the right eye was dilated, and incapable of contraction; but his power of vision was unaffected. This symptom was accompanied with a ptosis of the right upper eyelid, and a numbness of the right hand. I believe that nearly a year elapsed before the pupil was restored to its natural condition.

6. *Affection of the Circulation*:—If concussion of the brain be capable of disturbing the action of the heart, it is not remarkable that the greater injury arising from pressure should produce its effect on the circulation also. The effect however is not constant; and sometimes even where the other symptoms of pressure exist, there is no alteration of the pulse. Mr. Abernethy has observed that intermission of the pulse is a less frequent occurrence in cases of compression than in those of concussion of the brain. However that may be, I believe it will be found that pressure on the brain for the most part affects the action of the heart; not by producing actual interruption, but by causing its contractions to be either less frequent, or less forcible than natural. The influence of pressure on the brain on the circulation is sometimes very manifest in cases of depression of the bone of the cranium, where the depression is relieved by an operation. A child, three years of age, was admitted into St. George's Hospital having an extensive fracture of one parietal bone, extending into the adjoining portions of the temporal and occipital bones. Towards the posterior part of the parietal bone there was a considerable depression, with laceration of the membranes of the brain and of the brain itself. I assisted Mr. Gunning in an operation in which he removed a portion of the bone with a saw, and elevated the depression. Previously to the operation the pulse at the wrist was barely perceptible, but immediately afterwards it became distinct, and beat with considerable strength. A gentleman who held the child's hand during the operation, observed the pulse to be suddenly restored at the very instant of the depression being elevated. Another patient (a man) was admitted into the hospital having a fracture with depression of the right side of the frontal bone extending into the right parietal. The pulse beat no more than

forty times in a minute, but immediately on the depressed bone being elevated it rose to sixty in a minute.

7. *Sickness and vomiting*:—These symptoms occur in some cases of pressure on the brain from injury, but it may nevertheless admit of a question whether they should or should not be referred to the actual pressure. The same injury which occasions a fracture and depression of the cranium, or an extravasation of blood within the cranium, is likely to produce concussion of the brain also. In cases where the symptoms of pressure are the most distinct, and there is complete insensibility, there is no disposition to vomit; and where I have had occasion to apply the trephine on account of a fracture and depression, and there was no sickness previously, I have sometimes known the patient to become sick and vomit immediately on the depression being elevated.

The symptoms of pressure on the brain vary in different cases, not merely as they may exist in different degrees, but as they happen to be variously combined with each other. We find also that there is a great difference as to the period of their duration. Of two individuals, in whom the early symptoms appear to be equally urgent, one may die in the course of three or four hours, and another may survive for several days; and among those who recover, we may find some in whom the symptoms wholly subside in the course of a few days, and others in whom some remains of them exist after the lapse of several months, or even of years. Even in fatal cases the symptoms are not in every instance uniformly progressive, and it is not very unusual for them in some degree to subside, recurring afterwards with increased severity.

Where blood-vessels have been ruptured or wounded in other situations, secondary hemorrhage occurs in some instances at the end of a few days from the period of the injury having been inflicted. Does secondary hemorrhage ever occur within the cavity of the cranium? In one case, which came under my observation, I was led to believe that this actually happened, causing sudden death after three or four days of apparent convalescence. As I have met with no other instance of the kind, I conclude that such occurrence is very rare; but probably it would be more frequent, if it were not that in the practice of modern surgery, a very strict antiphlogistic regimen is usually pursued, for a considerable time after the occurrence of the accident. The following is a brief outline of the case to which I allude.

A man, thirty-five years of age, on the afternoon of the 8th of November, fell from a cart and struck his head against the pavement. A medical practitioner in the neighbourhood bled him, and he was afterwards brought to St. George's Hospital talking and reeling like a drunken man. He was again bled. On the following day he complained of head-ach, but was otherwise well. He continued without any symptoms until five in the morning of the 12th of November, when some of the patients



in the same ward heard him talking incoherently. The nurse called the house surgeon to him, but before he could arrive the man had become insensible, and was found lying motionless, with stertorous respiration and dilated pupils. Blood was taken from the arm, but the symptoms were not relieved, and he died in about half an hour after the commencement of the attack. On examining the contents of the cranium after death, a thin layer of blood was found extravasated in the cells between the tunica arachnoides and pia mater, where those membranes cover the posterior part of the two hemispheres of the cerebrum. In the lower part of the right anterior lobe of the cerebrum, the substance of the brain had been ruptured, and underneath this part, between the dura mater and tunica arachnoides, there was a collection of about two ounces and a half of blood. This last had all the appearance of a recent extravasation, and seemed to afford a satisfactory explanation of the sudden alteration in the symptoms, which immediately preceded the patient's dissolution: the hemorrhage in the first instance having in all probability been checked by the blood-letting, which was resorted to both immediately after the accident, and on his admission into the hospital.

#### SECT. 5.—*Wounds of the Brain and its Membranes.*

Wounds of the dura mater, greatly as they aggravate the ultimate danger of the case, do not in themselves add to the symptoms which immediately follow the accident. It is when the period of inflammation has arrived, and not until then, that the marks of punctured or lacerated dura mater show themselves.

The pia mater and tunica arachnoides are so thin and delicate in their structure, and so intimately connected with each other, and with the brain itself, that we cannot conceive them to be wounded, without the brain being wounded also. It would be idle therefore to treat of these two classes of injury as being distinct from each other.

The researches of modern science, have demonstrated that the brain is composed of various organs, intended to exercise very different functions: and the division of the substance of the brain made by the hand of the physiologist produces very different effects, accordingly as it detaches one or another of these organs from the rest of the nervous system. But those distinct results which are obtained with difficulty in experimental physiology, are not met with in cases of accidental wounds. The symptoms produced by the latter are always liable to be complicated with those of concussion, and in a great number of instances are also complicated with those of compression of the brain. Accidental wounds rarely affect the cerebellum and medulla oblongata, or even the more deep-seated and important parts of the cerebrum: and with respect to wounds of the cerebrum, such as are commonly met with, even without the complications produced by concussion, or depres-

sion of bone or extravasated blood, we find their effects to be so different in different cases, that they do not admit of being reduced to any general rule; and no data, which we have hitherto obtained, will enable us to predict the exact consequences to be produced by a wound of a given extent, or occurring in a given situation.

In illustration of this observation I may refer to two cases, related, the one by Morgagni,\* the other by Dr. Hennen.† In the first of these cases a man received a punctured wound from a sharp instrument, which passed between the eye and the roof of the orbit, penetrating through the latter into the substance of the cerebrum, to within a finger's breadth of the lateral ventricle. In the second case, the extremity of an iron ramrod entered the cranium, immediately below the nasal process of the frontal bone, and penetrated one inch into the anterior lobe of one hemisphere of the cerebrum. In each of these cases the wound was of the same kind, and very nearly in the same situation: but in one of them it was considerably deeper than it was in the other. It might well be supposed that there would have been some correspondence in the effects produced:—but what were the actual results? In Dr. Hennen's case, where the injury was the slightest, the patient was instantaneously deprived of life: while in Morgagni's case, where the injury was greatest, there were no symptoms whatever, and the patient was as if nothing unusual had occurred until the end of the third day, when suppuration was established.

Of these two cases, however, it must be allowed that the latter is to be regarded as being more in accordance with the general rule than the former. The experience of every individual, who has had the opportunity of seeing many cases of injury of the head, will afford examples of wounds penetrating into the substance of the brain, as well as of incised and lacerated wounds, in which the functions of the brain were not at all impaired, or only slightly impaired in the first instance. Even actual loss of the substance of the brain not unfrequently takes place without the occurrence of any urgent symptoms, and the patient may go on from day to day, with fresh portions of the brain oozing out of the aperture in the cranium, with his external senses perfect, his mental functions unimpaired, and free from paralytic affection.

It is not however to be supposed that there can be an extensive destruction of a part so important as the brain, without immediate death, or death in the course of a very few hours. In other cases in which the brain has been extensively lacerated, it has appeared to me that without the actual insensibility which follows concussion of the brain, there was a confusion of intellect beyond that which concussion usually produces. In many cases of wounded brain there are convulsive twitches

\* Letter 51. a. 57. † Military Surgery, p. 286.

of the muscles of the extremities. In a case in which there was fracture of the parietal bone, several splinters of bone having been driven into the substance of the cerebrum, on the splinters being removed, and when no evident cause of mischief remained except the wound which they had occasioned, the pupil of the eye of the opposite side remained preternaturally dilated. This is what might have occurred in consequence of pressure on the brain. It corresponds also to what we observe in cases of pressure, that wounds of the brain sometimes occasion an unnatural slowness of the pulse. But the more urgent symptoms of pressure are wanting; and the peculiar danger of wounds of the brain arises, in the great majority of instances, not from the immediate effects of the injury, but from the extensive and intractable inflammation which takes place afterwards.

SECT. 6.—*On some other Symptoms following Injuries of the Brain.*

The symptoms of which I propose to give an account in the present section also belong to the class of those which immediately follow an injury of the brain, that is, which show themselves previous to the occurrence of inflammation. I have however thought it better to give them a separate consideration, because there may be some doubts as to the exact nature of the injury of which these symptoms are to be regarded as the indication, and because there are several points respecting them which require to be elucidated by further observations.

I. A middle aged man received a blow on the head and was brought to the hospital with symptoms which were supposed to arise from concussion of the brain. These symptoms subsided in the course of one or two hours, but he remained afterwards completely deaf. His relations declared that his hearing had been perfect up to the period of the accident. He left the hospital at the expiration of three weeks without the smallest amendment.

A young woman received a blow on the head, by which she was stunned for a few minutes. After she recovered from the immediate effects of the accident, she found herself entirely deprived of the senses of smell and taste, and she was in this state when I saw her a month afterwards. The strongest and most pungent odours produced not the slightest sensation when applied to the nostrils; but they nevertheless increased the secretion of the lachrymal glands, or in common language made the eyes water, as under ordinary circumstances.

A middle-aged man slipped while walking, and struck the back of his head against the road; he was stunned for five or six minutes, then recovered so as to walk home. He saw objects double during that evening, and it was observed that he was deaf in one ear. He was kept awake by violent headach during the night. On the following day he had recovered from the double vision, but the other symptoms continued, and in addition to them

he discovered that he had entirely lost his sense of smell, and that there was also a partial loss of the sense of taste. He was bled several times, and kept on a low diet, and under this treatment the headach gradually subsided, and at the end of about four months he had recovered his sense of hearing. When he consulted me between five and six months after the occurrence of the accident, he was in the following condition. His pulse was 72 in a minute. He complained of a sense of noise in the right side of the head, especially in the morning and evening, but not during the night. He was impatient and irritable, especially when troubled respecting matters of business. He had no proper sense of smell, common odours were not perceived at all; but he *felt* the pungency of smelling salts, and they made his eyes water. With his taste he could distinguish bitter, sweet, and sour, but he was unable to distinguish flavours accurately. For example, he could perceive a difference between the taste of hops and that of sugar, but not between that of fennel and parsley; and the flavour of game was the same to him as that of other meat. Bitters had become disagreeable to him, though they had not been so formerly.

The late Mr. Grover of Hammersmith informed me of the case of a gentleman who had been under his care on account of an injury of his head, which entirely deprived him of the sense of smell. After some time, however, he began to recover of this symptom, and at the end of a year his smell was completely restored. I have already given an account of a case in which an injury of the head was followed by total blindness with permanent dilatation of the pupils, and this was found to have depended on a fracture and displacement of the bone in the basis of the cranium producing pressure on the optic nerves. But here there were other symptoms manifestly depending on compression of the brain itself: whereas no such symptoms existed in the cases which I have just related. It is indeed difficult to conceive that pressure on the brain should exist in so great a degree as completely to destroy an entire class of sensations, and at the same time be so partial as not to affect any other function of the nervous system. On the other hand it is also difficult to regard these as the effects of concussion of the brain: since it is one of the characteristics of concussion to produce no more than a diminution of sensibility, and that diminution, instead of continuing for months or years, is completely relieved in the course of a few days, and probably in a much shorter space of time. However produced, these are not the only examples which experience affords of partial nervous affections following an injury of the brain. Dr. Hennen gives the history of a patient who lost his sexual powers after a wound of the occiput. The same author observes, "The powers of speech are often lost while those of memory remain, and the sight is impaired while the hearing is perfect, and vice versa. I have met with numerous instan-



ces of this, and have had patients who told me that they could hear distinctly what I said, and distinguish my voice from that of others, and have repeated my words as a proof both of this fact, and of their retention of memory, while they could not distinguish my person or give utterance to their thoughts."\*

II. In some cases after an injury of the brain we find the patient attacked by violent convulsions affecting the whole person, and entirely different from those slight involuntary twitches of the muscles which have been already noticed. These convulsions a good deal resemble those which constitute a fit of epilepsy, but are not, like the latter, uniformly followed by a state of profound sleep or stupor. They are more formidable in appearance than in reality, as it is not uncommon for the patient after the convulsions have subsided to recover without any unfavourable symptoms. A young man, a butcher, was standing under a beam of wood which supported a side of beef, when the beam gave way and fell. The side of beef came obliquely on his back, and the beam by which it was supported struck his head. He was not immediately stunned, but in about a minute he became insensible, and in ten minutes more he was seized with a fit, in which he was violently convulsed, so that four or five persons were required to hold him. He was bled, but without relief. The fit of convulsions lasted for nearly three hours, and then suddenly left him. He now complained of pain in the head, but was perfectly sensible. He recovered without any further symptoms, except that the pain in the head continued, and on this account he was bled twice or three times in the course of the ensuing week or ten days.

A gentleman on the 8th of September, 1825, was thrown from his horse, and falling on the pavement received a blow on the arm which occasioned a fracture communicating with the elbow joint, and another blow which caused the scalp to be separated for a considerable extent from the anterior part of the head, and also occasioned a fracture of the frontal bone, but without depression. He was taken up in a state of insensibility. He was in this state a few minutes afterwards, when he was seized with violent convulsions, his limbs being moved in various directions, and with such force, that it was with much difficulty that several persons could hold him. The convulsions continued for about half an hour, when they subsided, leaving him in a state of stupor. Blood was now taken from his arm, after which he began to regain his sensibility. On the following day his sensibility was completely restored, and he recovered without any further unfavourable symptoms.

In these cases the convulsions took place within a short period after the occurrence of the accident; but there are others in which the patient is affected in the same manner, after the lapse of several days. Here the

convulsions must often be combined with symptoms of inflammation, so that it may be difficult to determine whether they are to be regarded as connected with the original mischief produced by the injury, or as arising from the subsequent inflammation. The following case however seems to prove that in some instances at least the convulsions which occur even at this second period depend on the former cause and not on the latter.

A lad, 14 years of age, received a blow on the head, and became instantly insensible. He did not utter an intelligible word, nor could he be prevailed on to show his tongue, nor to swallow either medicine or the liquid nourishment which was offered to him. However, he moaned when disturbed, the pupils of his eyes were sensible to the stimulus of light, and there was neither stertor nor paralysis. These symptoms slowly subsided, and no new symptoms, such as could be regarded as the result of inflammation, had shown themselves, when at the expiration of five days after the accident he was seized with convulsions agitating his whole person. Blood was taken from him by cupping, but this afforded no relief, and in the course of the succeeding twenty-four hours he had as many as fourteen or fifteen attacks, each lasting from one to three minutes. On the following day the state of the pulse not being such as to indicate the necessity of the further abstraction of blood, I determined to pursue an opposite plan of treatment. He was prevailed on to take beef-tea with toast; this was repeated at short intervals, and from the time of his beginning to take more nourishment the convulsions abated, and in the course of another day had wholly ceased. From this time his recovery proceeded uniformly and favourably.

In two of the cases which have been just related the other symptoms were such as might have arisen, and probably did arise, merely from concussion of the brain. This, however, does not prove the entire absence of extravasation, and there are some circumstances which may lead to the suspicion that something more than concussion is necessary to produce such attacks of convulsions as those which have been described, and which at any rate show that they may arise from other causes.

First, I have observed in experiments on animals that a wound on the basis of the brain which causes extravasation of blood on the surface of that organ, generally produces convulsions previous to that state of stupor and paralysis which immediately precedes death.

Secondly, the ordinary symptoms of concussion occur, and indeed are more complete, immediately after the injury is inflicted than at any subsequent period; whereas, according to my experience, convulsions never occur until after a certain lapse of time, when extravasation may have begun to take place.

Thirdly, the following case occurred in St. George's Hospital, under the care of Mr. Keate. A man was admitted who had fallen from the top of a coach, and had struck his head. He was stunned, and continued insen-

\* Hennen's Military Surgery, p. 305.

sible after being brought to the hospital. At the end of two days, when he had begun to recover from this state of stupor, he was seized with violent convulsions, affecting not only the muscles of his limbs, but also those of his face. The first attack of convulsions continued about six minutes, but this was succeeded in the course of an hour and a quarter by four similar attacks, and in spite of a considerable quantity of blood being taken from the arm. At the end of this time Mr. Keate saw him, and made an incision through the scalp at that part which had received the violence of the injury. A fracture about an inch in length was discovered at the posterior part of the left parietal bone, extending into the lambdoidal suture with a slight depression. At this part Mr. Keate applied a saw, and removed the depressed portion of bone. A small coagulum of blood was found lying on the surface of the dura mater, and this having been exposed there was no recurrence of the convulsions.

I have not observed convulsions to take place where there are symptoms indicating the existence of considerable pressure on the brain. The pressure in these cases does not destroy the functions of the brain; it seems to act merely as a cause of irritation, and the operation of it may be compared to that of an exostosis, or other tumour, in producing fits of epilepsy. The circumstance of convulsions taking place after the lapse of some days when they did not take place in the first instance, may probably depend on the brain having been rendered more susceptible by the loss of blood and other methods of depletion, to which it was necessary to have recourse for the relief of the more early symptoms.

III. Occasionally after an injury of the head we find the patient in a state of furious delirium, raving and unmanageable. A man who had received a blow on the head was brought into St. George's Hospital in this condition, uttering loud exclamations, abusing and striking those who were near him, so that it was necessary for several persons to assist in holding him by force as if he were a maniac, while blood was being taken from his arm. As the blood flowed the delirium left him. He remained with slight symptoms of concussion; and these also gradually subsided, leaving the patient in a state of health. Cases such as this might lead us to regard this state of furious delirium as the consequence of mere concussion of the brain. But the same observations may be made respecting these cases, as respecting those in which there are convulsions. The absence of the more urgent symptoms of pressure on the brain does not absolutely prove that no degree of pressure actually exists: and instances occur in which this state of the sensorium is manifestly combined with depression of bone or extravasated blood. For example:—A middle aged man, who had received a blow on the head, was brought to St. George's Hospital an hour after the occurrence of the accident, in a state of raving delirium. There was a wound over the right eye-brow, and a fracture of the frontal bone

extending obliquely upwards with a considerable depression. The depression, however, was not elevated, as the delirium subsided on blood being taken from the arm. After this the man fell into a state of insensibility, from which, however, he could be roused, and then he complained of headach. On the following day he was more sensible, and from this period he recovered without any bad symptoms; but it was observed that the pupil of the right eye remained preternaturally dilated, and that it contracted very feebly on exposure to light.

A middle aged man fell from a cart, and struck his head against the wheel. In about half an hour he was brought to St. George's Hospital. He was sensible, and complained of pain in the head, but more of pain in one arm, which was discovered to have been fractured. At this time he had no other symptom except that the right pupil was more dilated than the left. There was a wound of the scalp, and a fracture with a slight depression of the anterior and inferior part of the left parietal bone. He was put to bed, and while his head was being shaved he became delirious, furious, and unmanageable, so that it was necessary to restrain him by main force. On being bled, he became faint, tranquil, but not perfectly sensible. In half an hour the faintness had subsided, and he relapsed into his former state of raving delirium. He was again bled, and became more tranquil, but still not perfectly sensible. In the evening, twelve hours after his admission, as he continued insensible, Mr. Gunning applied the trephine in the situation of the fracture, and removed a portion of bone. The man appeared to be relieved, and spoke rationally after the operation. On the following day he was quiet, and sensible when roused, but not so to ordinary impressions. Early on the next morning he fell into a state of stupor, with stertorous breathing, a slow pulse, and cold extremities, and soon afterwards expired. On dissection there was discovered a disjunction of the coronal suture in some degree separating the parietal and frontal bones from each other. From a drachm to a drachm and a half of blood was extravasated between the dura mater and the right side of the frontal bone, and the right parietal bone. There was also in some parts a slight degree of extravasation in the cells between the tunica arachnoides and pia mater. A small quantity of pus was found both between the dura mater and the bone, and between the tunica arachnoides and pia mater.

In another case where the patient was admitted into the hospital with the same symptoms of furious delirium, after the delirium had subsided he fell into a state of perfect stupor, from which he could not be roused until twenty ounces of blood had been taken from the arm: and when the immediate effects of the blood-letting had subsided he again relapsed into the same state of stupor. The pupil of one eye was observed to be preternaturally dilated, contracting in some degree, but imperfectly, on exposure to light. This patient ultimately recovered, and of course it



was not possible to be made acquainted with the exact nature of the injury which he had sustained, but I was led to regard the state of complete insensibility in which he for some time lay, joined with the dilatation of one pupil, as a sufficient indication of the existence of pressure on the brain to a greater or less extent.

From the evidence here adduced there seems reason to believe that furious delirium and convulsions occur after an injury of the head under nearly parallel circumstances. The former symptom, like the latter, may be produced by pressure on the brain, not however by such a degree of pressure as threatens completely to annihilate the function of that organ, but by that smaller degree of pressure which operates merely as a source of irritation. It must be admitted, however, that the subject is not exhausted, and that further observations are required for its complete elucidation.

[To be continued.]

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#### PATHOLOGICAL AND PRACTICAL OBSERVATIONS ON DYSMENORRHŒA.

By JOHN MACKINTOSH, M. D., Acting Surgeon to the Ordnance, Physician to the Brown Square Dispensary, and Lecturer on the Practice of Physic, &c., in Edinburgh.

Dysmenorrhœa is a very painful affection, of frequent occurrence, and it is one which has always been an opprobrium to medicine. When menstruation is painful, it is generally scanty, and along with the discharge we frequently find shreds of membrane, like the *decidua uteri*; and occasionally a substance, the size of a hazel nut, is passed; indeed, when floating in water, it resembles a miscarriage at about the fourth or fifth week. Women who pass the shreds of membrane, suffer very severe pain in the region of the uterus, attended with some bearing down; but those who pass the larger masses are generally married women, and although of a different character, their sufferings are fully more severe than with children at the full period. Some are affected with this disease from the first of their menstrual lives; some not till after their marriage; and I have known it not to occur in others till after the birth of a first child, and in all these last instances which have come under my notice, the labour has been long and painful. Many women, who are affected with dysmenorrhœa, frequently have very little suffering during one period, but they complain much at the next, and at the third time they suffer the greatest torture. I have remarked, that in those who have, now and then, an easy time, it is immediately subsequent to the expulsion of a great deal of deciduous looking matter, or of the small mass like the miscarriage.

This disease has been described by all authors from the earliest periods, and it has in general been remarked, that women affected with it are barren. It is unnecessary to quote

the opinions of authors to show the uncertainty which has prevailed respecting the nature and seat of this disease, but I may state, that some suppose it consists merely in an inflammation affecting the mucous membrane which lines the uterus, while others think it is owing to a want of nervous energy of the uterine system, or to constipation, or exposure to cold and damp, &c., and the remedies applied are general and local bleeding, the warm and cold bath, opiates, laxatives, and warm clothing, but with how little *permanent* advantage every experienced practitioner can tell.

It always occurred to me, that there was some mechanical cause which produced dysmenorrhœa, and I had settled in my own mind, that it was one of those affections whose nature and seat were still open for investigation. For many years my attempts were baffled, perhaps, because my sphere of observation in the diseases of women, was not so extended as it has since been. In the year 1823, a gentleman called to say he had brought a curious donation to my museum, of an uterus without an orifice. Upon examining it minutely, I found a mouth; but it was so small, that it would barely admit a hog's bristle. It occurred to me at the moment, that a small orifice might possibly be the cause of the serious affection under consideration; and I have since had many opportunities of investigating this subject; I have also had the advantage of assistance from several of my pupils, and have now obtained many preparations, which were taken from the bodies of individuals who died of different diseases, particularly of phthisis, and whose histories proved that they had laboured under dysmenorrhœa from the very beginning of their menstrual lives. In these preparations of the uterus, the orifices, instead of being shaped like the mouth of the tench, are either circular, or nearly so, and some of them so small, as to be just capable of receiving a bristle, others are a little larger, and will allow a common-sized silver probe to enter, and some are a little larger still. This condition of the *os uteri* accounted quite satisfactorily for dysmenorrhœa; the menstrual discharge, after being secreted in the uterus, cannot readily escape; it distends the uterus, producing considerable uneasiness in the pelvic region, and is at last expelled by the contractions of the uterus. These uterine contractions cause increase of suffering, and a bearing down sensation, as in miscarriage. The continuance and frequent recurrence of this uterine irritation, will give rise sooner or later, to inflammation in the lining membrane of the uterus, which will account for the formation of the decidua, which is discharged like shreds of the membrane, or occasionally entire, when it resembles a miscarriage, but which, when examined, is found to resemble a soft coagulum of blood. Or, in consequence of the long-continued determination of blood to the uterus, the vessels may discharge a little blood into its cavity, and the mass may be thus formed.

That women should generally be barren



who thus suffer, strengthens the view which I have been induced to form. From the results of the accurate experiments of that ingenious and distinguished physiologist, Dr Blundell, of London, together with the information that has been collected from the aberrations of nature, as seen in cases of extra-uterine conception, and also from some of the vices of mankind, it appears certain, that the semen of the male must pass, at least, into the cavity of the uterus, before impregnation can take place. In this case it cannot get in, from the small size of the *os uteri*. These circumstances also readily account for the uncertain and unsatisfactory nature of the practice generally pursued.

My mind now became occupied with devising means, likely to cure women affected with dysmenorrhœa. Mechanical dilatation appeared to be the proper remedy, but I was afraid to carry it into execution, or, indeed, to propose such a measure to a modest woman, without being able to give an assurance, almost amounting to a certainty, that it would cure her, which I could not conscientiously do. And although I had constantly cases of this kind under my care, I never attempted the operation, nor, perhaps, should I till this day, if chance had not thrown the following case in my way.

A young woman, aged 22, came from the country to consult my friend and colleague, Dr. J. A. Robertson, who sent her to me. The female friend who accompanied her stated, that the menstrual discharge had never appeared, that she had always been a healthy girl till she had reached the age of sixteen, from which period she began to suffer, and to fall off. Regularly every month she complained of pains in the back and loins, together with a sense of weight and bearing down in the passage. At first she suffered slightly, and was soon able to perform her duties as a servant, but for the last two years she had never known what it was to have a day's ease; that she would submit to any thing to be cured and to have that which other women had. The girl appeared to be above the middle stature; the mammae were undeveloped; she was of an awkward shape; her voice was harsh, and her skin coarse and dark coloured, so that had I not been told she was ill, I never could have guessed it from her appearance. Her abdomen was not tumid, but I was told it was occasionally swollen, particularly after meals, which seemed to me to be from flatulency. She appeared to be of a nervous temperament, and was exceedingly shy and timid.

Upon examination, my fingers passed readily into the vagina, which was considerably relaxed, and the uterus was felt much lower than natural, but I could discover no orifice. Dr. Robertson had previously discovered the same fact, but had not then communicated the circumstance to me, thinking that he might have been mistaken. I repeated the examination many times, and after feeling the spot where the orifice ought to have been, which was distinguished by a

small dimple, I attempted to introduce one of the smallest silver probes I could get made, but was unsuccessful in every attempt. It then occurred to me, that the malformation might be owing to an extension of the mucous membrane over the orifice, in which condition we sometimes see the urethra of a new-born male child. I determined upon giving her the chance, particularly as the means to be used would not certainly produce severe pain. Accordingly the sharp and triangular extremity of a silver probe was introduced, directed by the finger, and conducted to the part above described, and a perforation made by employing a rotatory motion; the instrument was then withdrawn, and the round point introduced, which readily passed up to the fundus of the uterus. For several days she complained of a good deal of burning pain, attended with a slight discharge of mucus, a little tinged here and there by bloody specks, and I did not think proper to interfere further, until the irritation had subsided. In about eight days I began the attempt to produce dilatation, which was persevered in daily, increasing the size of the instrument, and by the twelfth or thirteenth day I was able to introduce No. 6 male bougie (straightened) to the fundus of the uterus. On the following day there was the appearance of so much irritation, both local and constitutional, that I made no further attempt. In two days afterwards she menstruated, and has been regular ever since, and suffers neither pain nor inconvenience. Her health and strength soon recruited, and in a short time her appearance became quite feminine. She has called upon me several times since, at intervals of five or six months.

I have since dilated the *os uteri* in six cases of dysmenorrhœa, and I may mention generally that the success of the practice has been most satisfactory; in all the cases the women had suffered for years, and they have all menstruated regularly, and without pain, for the last six months. The highest number I have introduced is No. 8, and I have insinuated the instrument to the very fundus. I feel a delicacy in giving the particulars of the cases, for obvious reasons. The profession may, however, rely upon my statement, that it is, at least, a safe expedient, and one not necessarily painful. The only bad consequence which I have seen, was in one lady, who, during the operation, had severe rigours, which lasted for two or three hours, and which were followed by fever, and terminated in copious perspiration; the instrument was not re-introduced for ten or twelve days, and no such effect afterwards followed. I do not mean to assert that all cases of dysmenorrhœa are owing to a small *os uteri*. I believe that it is occasionally produced by inflammation of the lining membrane of the uterus; and also by scirrhus affections of that organ.

In one of the six cases the *os uteri* was large enough, but there was a contraction in the *cervix*, which would not allow the introduction at first of any thing larger than a common



probe. In my museum are two preparations which illustrate this subject; in the one the *os uteri* was completely closed up by disease, inflammatory action took place in the inner membrane, and above two ounces of pus were contained in the cavity of the uterus, dilating it to about the size which it acquires in the second month of pregnancy; in the other, the cavity in the body of the uterus is divided into two, the effect of previous inflammation, so that there was no communication between the upper compartment and the lower.

Since writing the above, a lady, the subject of a seventh case, has menstruated three times since the introduction of No. 6, steel bougie, without the slightest pain or uneasiness during the two first periods; but during the third, she experienced a slight uneasiness in the pelvic region, which, although trifling, deserves to be mentioned. She also complained of nausea and headach, which might have been produced by other causes. It ought also to be mentioned, that she previously suffered intense pain during every menstrual period for between six and seven years.

I have lately contrived a very simple instrument, which I think will enable me to complete the dilatation most effectually in less than half the number of operations, which, under such circumstances, is a matter of the very first importance. The result of the trials made with this instrument, shall be communicated to the profession at an early period, through the medium of your valuable and independent journal.

From the London Medical Gazette.

#### OBSERVATIONS ON THE OPERATION OF LITHOTOMY. By M. le BARON LARREY.

If the operation of bubonocoele presents almost always difficulties in the performance, arising from the various and unforeseen complications which strangulated herniæ afford, we see likewise, in lithotomy, difficulties to overcome occasionally, which require all the skill and courage of the surgeon to surmount.

It is often difficult, sometimes impossible, *a priori*, to appreciate the nature of urinary calculi, and their relative situation with respect to the bladder, so as to determine the fittest mode of operating in each case: therefore an exclusive method cannot be recommended, or adopted; each case must stand upon its own merits; for that operation which would appear to be the least painful and most certain, is often contra-indicated in the particular instance in which it may have been proposed. The following cases will explain my meaning.

The subject of the first, was King, a soldier in the first Swiss regiment of the guard, who was admitted into the hospital in September 1825, complaining of violent stranguary and tenesmus, with fever, accompanied by incontinence of urine, which passed from him drop by drop. A stone was discovered to be the

cause of these symptoms, which appeared not only to be unequal on its surface, but adherent to the bladder; and, therefore, I expected to meet with difficulties in the operation, which was performed in the presence of MM. Ribes and Souberbielle. There was some difficulty in passing the sound into the bladder, in consequence of the size and situation of the stone; but the incision of the integuments, urethra, and neck of the bladder, was quickly effected by a strong straight bistoury. The introduction of the gorget, however, was equally difficult, and that of the forceps became absolutely impossible. The index finger being passed to the bottom of the wound, I discovered that the stone, covered with tuberculous asperities at the part corresponding to the incision, was adherent, at every other point of its circumference, to the mucous membrane of the bladder: it was necessary, therefore, to destroy these adhesions, which I, at length, succeeded in effecting; but afterwards, I was compelled to pass in the forceps, with their blades separated, in the same manner that the forceps are introduced between the cranium of the infant and the pelvis, in difficult labours. The first attempts to extract the stone were followed by the fracture of some of its asperities; but, at the *third trial*, the whole was brought away, with shreds of the mucous membrane, which covered about three-fourths of its circumference. Emollient and anodyne injections were then thrown into the bladder, a ligature was applied to the transverse artery of the perinæum, which had been divided, and the patient put to bed. Iced mucilaginous drinks were prescribed, with emollient clysters, and chicken broth for diet. A few minutes after the operation, King was plunged into a cold, emollient bath, on coming out of which he slept for several hours: that night and the following day passed without any bad symptoms. In the evening of the following day, he had a slight attack of fever, with some pain in the abdomen and tenesmus: two successive bleedings in the arm were practised, the baths were repeated, and anodyne emulsions prescribed to be taken at night, as well as embrocations of the oil of almonds upon the belly. From the fourth day, I no longer had any anxiety as to the issue of the operation, and in about a month the patient was perfectly well.

From the fifth to the eighteenth day, he had passed by the wound portions of white membrane, thrown off from the mucous surface of the bladder: at length this organ became gradually so much dilated that the patient was enabled to retain his urine from two to three hours.

The second case occurred in a child named Binet, 7 years of age, who had suffered for some time from difficulty in passing his water. Having sounded him, I discovered a small calculus, which could only be reached by passing the instrument in very deeply. It was not to be felt by the finger in the rectum; nevertheless, being certain of its existence, I did not hesitate to perform the operation. The in-



cisions were made rapidly and easily; but the extraction of the stone was attended with difficulty, on account of its adherency to the fundus of the bladder; a very long and fine pair of forceps were necessary to lay hold of it, and with these I succeeded easily. The adhering portion was covered with membrane: the same precautions were used as in the preceding case;—emollient injections being passed into the bladder, and the child put into an emollient and gelatinous bath, nearly cold, a few minutes after the operation. This child had scarcely any fever, and was cured on the nineteenth day.

**REFLECTIONS.**—It is difficult to carry the lateral operation of lithotomy to a greater degree of perfection than it has now reached, especially when the surgeon uses no other instrument than the bistoury, the action of which he can direct at pleasure. In this operation, two accidents are alone to be feared; but the surgeon thoroughly acquainted with anatomy, can readily avoid them. These are the wounding the rectum, and opening the pudica interna artery. The first is best avoided by emptying the intestine with clysters, or any other means, if it appear to be loaded with feces; as to the artery, that can only be reached by carrying the edge of the knife transversely against the ascending branch of the ischium, which must even be cut before this vessel can be wounded; therefore the hæmorrhage from the transverse artery of the perinæum is alone to be dreaded in this operation, the division of which cannot be avoided in any case. This is easily remedied by the application of a ligature, which should always be made, whether the bleeding be much or little. It is by attending to this precaution, not mentioned by authors, that I owe the success of my operations; for death is often occasioned by hæmorrhage, or else from the plugging of the wound, which bleeding, when it supervenes, renders necessary, and which is generally followed by inflammation, or by infiltration of urine into the cellular tissue; whilst, on the contrary, the application of the ligature prevents hæmorrhage, renders all plugging of the wound unnecessary, and affords a facility for putting all those means in use which are proper to dissipate spasm and to prevent the occurrence of inflammation, or of urinary fistulæ. The most efficacious of these means are emollient and anodyne baths, of the temperature of 20 or 21 degrees of Reaumur—[77 or 79 of Fahrenheit.]

From the above-cited cases, it appears that tearing the mucous membrane of the bladder is not so dangerous as might have been conceived; for it is very evident, in the first case especially, that this membrane was torn to a great extent, since patches of it were found attached to the stone. I think, then, that the most important rule, is to tie the divided vessels; a plan that should be followed in the course of these vessels, whether they are apparent or not. It is impossible that this precept can be too much diffused; for to it I attribute the constant success which has attended my operations of lithotomy; and if the

public in general knew that this was as certain for its result as other surgical operations, they would not resort to mechanical means of cure; which, though more gentle and less dangerous in appearance, are rarely found to be so in practice.

In the two cases above mentioned, what other method of operating could have answered? One of the surgeons (M. Souberbielle) wished that the high operation should have been performed in the case of King, but I rejected that plan, because I judged it to be impracticable, the bladder being retracted and adherent, in nearly the whole of its internal surface, to the asperities of the stone. It would, therefore, have been impossible to have passed the *sond à dard* of Frere Come above the pubis, without running the risk of piercing the bladder at any other point rather than the proper one. For the same reason, how could the concave blades of the forceps of Civiale have been placed between the stone and the bladder, to embrace this stone, and to pulverize it with the trephine, without piercing or tearing the parietes of the bladder? Would this proceeding have been more applicable in the second case, in which the stone adhered to the fundus of the bladder? The same objections would have applied to the double instruments for lithotomy of the ancients, lately again introduced by M. Dupuytren. Finally, had King been operated upon by the method of Celsus, it may be easily seen that the blades of the instrument could not have been introduced between the bladder and the stone without wounding the parietes of the viscus, where they were attached to the rough portions of the stone. The two individuals mentioned above, were presented to the Royal Academy in November, 1825.

From the London Medical Gazette.

**MEMOIR ON THE DISLOCATION OF THE HEAD OF THE RADIUS.** By C. ASTON KEY, Surgeon to Guy's Hospital, &c.  
*Read at the Hunterian Society, July 2, 1828.*

Having been led, in the course of some investigations into the subject of dislocations, to pay particular attention to the circumstances attending *dislocation of the head of the radius forwards*, and having noticed some facts connected with this accident not hitherto described by authors who have written on the subject, I venture to lay them before the Hunterian Society.

It need scarcely be observed that, to those who are much engaged in practical surgery, this accident is known to be so difficult of reparation as frequently to have resisted attempts at reduction under the most judicious hands; and for the information of those who have not witnessed this accident, and who are therefore not aware of the difficulty of reducing the bone, it may be sufficient to quote the highest authority on the subject, that of Sir Astley Cooper, who mentions in his work on Dislocations, that he has himself witnessed six



cases of this accident, four of which were unreduced dislocations. He adds a seventh case, which had also been left unreduced. Of these five (out of seven) unreduced cases, one occurred under the late Mr. Cline, "who, after the most varied attempts that his strong judgment could suggest, failed to reduce the bone; and the woman was discharged from the hospital with the dislocation unreduced." Another of the unsuccessful cases occurred to Sir Astley Cooper, who, "after continuing and varying the extension for an hour and a quarter, could not succeed in effecting a reduction."

The issue of these cases, under the hands of surgeons so eminent for a knowledge of their profession, is sufficient to show the difficulty attending the reduction, and to prove the importance of the subject; but at the same time it would lead us to suspect, that either the nature of the dislocation, or the principle of reduction, must be imperfectly understood.

In the dislocation forwards, the head of the radius is said to be thrown upon the external condyle of the humerus, and to lie over the coronoid process of the ulna; and in a dissection of an old dislocation of the kind, Sir Astley Cooper describes the head of the bone as resting in a hollow above the external condyle. In order to understand the nature of the dislocation, and the manner in which the muscles act in preventing reduction, I endeavoured to dislocate the head of the radius forwards on the external condyle, having first divided the coronary, capsular, lateral, and oblique ligaments; and also a portion of the interosseous: notwithstanding this free detachment of the head of the bone, I found that the radius could not be moved upwards toward the external condyle by any force that I could employ; nor indeed can such motion be given to the bone while the connexion between the radius and the carpus remains entire. Complete dislocation at its carpal extremity is requisite to allow this upward movement of the radius, which the fibres of the interosseous ligament alone can prevent.

The commonly received opinion as to the situation of the head of the radius arises from two circumstances; the striking of the head of the bone against the fore part of the humerus in the flexion of the fore-arm; and the examination of unreduced dislocations, in which the head of the radius is apparently lodged on the external condyle of the humerus. These circumstances, however, only take place in certain positions of the arm, as will be seen when the nature of the dislocation is understood.

A close examination of the several circumstances attending this dislocation, combined with the impossibility of the radius being thrown on the condyle of the humerus, will show, that the head of the radius passes forward upon the coronoid process of the ulna, resting upon that process and upon the tendon of the brachialis internus muscle; and a farther

investigation will also explain the difficulty of the reduction, as well as the appearance which the limb assumes under the accident.

The signs of this dislocation, as correctly described by Sir Astley Cooper, and as witnessed in one case by myself, are threefold. First, the arm cannot be perfectly extended. This arises from the brachialis internus tendon being compressed by the head of the radius, which thereby limits the extension of the fore-arm. Secondly, the power of flexion is limited to nearly a right angle, in consequence of the head of the radius striking against the brachialis internus and fore-part of the humerus, when the fore-arm is bent. It is to be observed, that in the flexion and extension of the fore-arm, the displaced head of the bone follows the motions of the coronoid process of the ulna, retiring from the humerus when the elbow is extended, and in the flexion of the joint moving with the coronoid process towards the humerus. Thirdly, the limb is in a state of semipronation, being more or less fixed in that position; and any attempt at rotation is attended with difficulty, and productive of pain. When we look for a cause of this fixed condition of the limb in the action of some of the muscles, we find the pronator teres and biceps relaxed, and the supinator brevis in its natural state. Muscular contraction, therefore, does not appear to fix the head of the bone in its new situation; but in the extended state of the interosseous ligament will be found to exist the principal, if not the sole, difficulty of reduction.

Attempts at reduction have always been made under the impression that it was necessary to disengage the radius from the external condyle by extension. It must be apparent, from the situation of the radius on the coronoid process of the ulna, that extension alone can effect nothing towards the reduction. Nor, indeed, is the principle on which extension by the hand is adopted, correct; for extension by the hand cannot be made to act on the radius independently of the ulna: as long as the ligaments connecting their carpal extremities are entire, they are virtually one bone, and are equally extended by a force acting through the medium of the carpus. It is, however, true that this dislocation has been reduced, while extension has been forcibly made, as in a case of Sir Astley Cooper, in which he placed the arm bent over a sofa;—but in this position of the limb, it is highly probable that forcible supination was at the same time taking place—a movement calculated to reduce the dislocated bone when it is not much advanced on the coronoid process. But that extension, as a means of reduction, is inadequate, is proved by the circumstance of five out of the seven cases given by Sir Astley Cooper having been left unreduced.

The impediment to reduction appears to be a band of the interosseous ligament, about one-third down the fore-arm, which is violently stretched by the separation of the radius from the ulna, and retains the head of the radius on the coronoid process. Upon the extent to

\* Sir Astley Cooper on Dislocations, page 420, 3d Edition.



which the interosseous ligament is torn, will depend the ease or difficulty of the reduction. In cases where the interosseous ligament is extensively torn, and the head of the radius not firmly bound down, supining the hand, while the head of the bone is pressed outward, will enable the surgeon to replace it. But in a more difficult case, when the supination of the limb fails, in consequence of the tension of the interosseous ligament, the surgeon can convert this opposing band of ligament into an *auxiliary* in the attempt at reduction, *by forcibly pronating the hand*. This can be understood by observing the twisting of the interosseous ligament, in the ordinary position of the dislocation, and the effect of supination and pronation upon its fibres. In supination, the lower fibres of the ligament are relaxed, while the upper are rendered tense; in pronation the contrary takes place. The first attempt at pronation is attended with difficulty; but as soon as the spine of the radius becomes turned toward the ulna, the interosseous ligament draws the head of the radius outward and backward into its place. Some assistance may be obtained by pressing the head of the bone outward, and bending the arm, to relax the brachialis interior muscle.

From the Transactions of the Medical and Chirurgical Society of London.

**CASES OF TUMOURS IN THE ABDOMEN ARISING FROM ORGANIC DISEASE OF THE STOMACH; WITH REMARKS.** BY EDWARD J. SEYMOUR, M. D. (Sec.) Fellow of the Royal College of Physicians, London, and Physician to the Asylum for Recovery of Health.

Several cases have recently fallen under my observation, in which tumours in the abdomen of considerable size were found to arise from organic disease situated in the stomach, they appear to me worthy the attention of the Society; first, because very few such cases are on record, and secondly, because in two of them the symptoms which have been considered to characterize organic disease of this viscus were altogether absent.

Among the numerous cases of disease of the stomach related by Morgagni,\* one only is to be found in which a tumour was perceptible during life, and in this instance the pain in the stomach, to which the patient had been long subject, and the constant vomiting which had existed during the latter period of his life, gave sufficient evidence of the seat of the disease.

In fourteen cases related by Lieutaud,† two only are mentioned where the tumour formed by the disease was perceptible externally, and in these the symptoms of pain, vomiting, heart-

burn, &c. were sufficient to draw the attention of the physician to the real state of the case.

In Dr. Monro's work on Morbid Anatomy,\* a very remarkable case is detailed, in which "a lady had suffered during some time from pain in the epigastric region, indigestion, and wind in the stomach and bowels." On examining the body, a tumour was found on the right side of the navel, of an oval shape and about the size of an orange, which at the time was supposed to be lodged in the colon. On inspecting the body after death, the stomach was found to have fallen down as low as the navel; on opening it there appeared a tumour adhering by its neck to the villous coat. The surface of the tumour "was smooth, and the body of it so firm, solid, and tough, that it was cut through with some difficulty."

Dr. Baillie observes in his work on Morbid Anatomy, "where the person is much emaciated, and the cancerous swelling is situated near the pylorus, or along a part of the great curvature of the stomach, it may be felt in the living body by a careful examination by the hand." This implies only that in certain cases such enlargements may be discovered, whereas in the cases which I am about to relate the tumours were visible and of very considerable size.

The essential symptoms of cancer or fungus hæmatodes of the pylorus, enumerated by authors, are pain in the region of the stomach aggravated on taking food, frequent vomiting sometimes mixed with blood, often occurring about half an hour after solids or fluids have been swallowed, sensation of weakness, occasional syncope. As the disease advances, the vomiting increases in frequency, and resembles coffee in colour; and there are often accessions of hectic fever with great emaciation.

The disease very rarely, if ever, attacks persons under forty years of age, and is more common in women than in men. It has been very frequently observed in persons subjected either to great fatigue of mind or anxiety. In a great majority of cases there is a remarkably exsanguine appearance in the countenance, even early in the disease.

In the numerous cases related by M. Lieutaud, vomiting was always present, and in the greater number acute pain was experienced in the stomach. M. Vicq d'Azyr, in his very able article Anatomie Pathologique, in speaking of this disease, says, "It is worthy of remark, that as there is *always vomiting* when the seat of the malady occupies the pylorus or its neighbourhood, so deglutition is impeded or altogether obstructed when the disease attacks the cardiac orifice."

"When the disease," says Dr. Monro, "is seated in the stomach, there is great pain in the organ affected, with all the usual symptoms of indigestion, very frequent nausea and vomiting, and the occasional rejection of blood by vomiting, and the patient dies completely exhausted."

\* Epist. 29. Art. 6.

† Liber primus de Læsionibus Abdominis, Obs. 941.



Although these symptoms are so common as to be necessarily enumerated in the history of the disease, yet they are by no means uniformly present, two of them sometimes existing in a slight degree only, and occasionally being altogether absent, viz. pain and emaciation.

A very remarkable case is related in the practice\* of Dr. Pemberton, where extensive disease existed in the stomach, and no symptom whatever was present during life to mark its nature. A similar case is related by De Haen, where periodical vomiting was the only suspicious symptom, in a patient whose appetite, circulation, and digestion, appeared to be perfectly natural, the evacuations being sufficient in quantity, and of healthy colour.†

In the recent very laborious work of M. Andral, on diseases of the abdomen, several cases of fungus hæmatodes of the pylorus are related; in the greater number of which pain denoting disease of the stomach was altogether absent, but the vomiting, and emaciation, and exsanguine appearance of the patient, together with the occasional detection of a hardness in the situation of the smaller extremity of the stomach, rendered it difficult not to perceive the nature of the disease. This author is of opinion that no symptoms exist, which can in the living body point out the diagnosis between this disease and chronic inflammation of the stomach.

The first case which I shall relate is one which I had an opportunity of observing in St. George's Hospital, under the care of Dr. Chambers; the characteristic signs of the disease were undoubtedly present in this case, but its extent and the size of the tumour were very remarkable.

CASE I.—Ann Row, æt. 39, unmarried, a cook. Admitted July 11, 1827. Has been subject to occasional pain in the abdomen for several years past, not however sufficiently severe to confine her to bed. About Christmas last she was attacked with vomiting of blood and diarrhœa, with very violent pain in the belly. About two months ago she perceived a tumour at the inferior part of the left hypochondrium, extending to the umbilicus.

The tumour, which is hard, unequal, and very tender on pressure, occupies the whole of the epigastric and the umbilical region, extending to within an inch of the symphysis pubis and to the right iliac region; at this latter part (an inch to the right of the navel) it is more elevated, and there is a strong pulsation communicated through it. She vomits occasionally after taking food, but not always; sometimes when the stomach is empty. She describes what she vomits to be bitter and sour. Bowels very much relaxed, tongue clean and moist and of natural colour; no catamenia for three months; pulse 96, very weak; urine scanty; she is much emaciated.

12th Sickness very distressing, bowels

open. (Haust. Salin. Efferves. 6tis. horis c. T. opii  $\mathfrak{m}$  v.)

16th. Hirudines viij tumori. Fetus papaverum abdomini admovend. R Bismuth. Subn. Oss. Pulv. Tragacanth. C. gr. v.; M. Ft. Pulv. t. d. Rept. alia.

18th. There is an equally diffused swelling of the parts about the right clavicle, extending to the right axilla, which is very tender to the touch; the mamma is not affected, the right arm and hand are œdematous. (Hirudines viij tumori. Fetus partibustumidis admov. P.)

20. P. 23d. Sickness less severe, constant purging, great tenderness in the swollen part, pulse natural, tongue healthy, skin cool, emaciation increased. (Hirudines viij regioni tum. Postea applic. Cataplasma Lini.) R Acidi Hydrocyanici Medic.  $\mathfrak{m}$  j.; Decoct. Hordei  $\mathfrak{z}$  j. M. Ft. haust. t. d. sum. Rept. alia.

25th. Died.

26th.  *Sectio Cadaveris.*—The cardiac extremity of the stomach was healthy; but on cutting the anterior surface of the pyloric portion the coats were found considerably thickened, and on the inner surface an irregular tumour presented itself, occupying about two-thirds of the circumference of the stomach, and only leaving the anterior part free. The tumour began about the situation of the pylorus, and its greatest length was about five inches extending towards the left side. It projected about an inch into the interior of the stomach, the surface being very uneven, several round masses rising upwards from the body of the tumour. The surface was for the most part of a reddish yellow colour, some parts nearly brown, and here and there complete sloughs had been formed. The surface of the duodenum and of the stomach was very vascular around the tumour.

In the centre of the tumour an opening about an inch and a half in diameter, with sloughy circular margin, led backwards into a cavity containing about two ounces of fetid pus. The whole surface of the cavity being covered with a brown sloughy membrane like the margin of the opening, its parietes were formed by adhesions between the stomach, colon, and duodenum anteriorly, and by the spine behind. At the margin of the opening of the stomach nearest the duodenum, a sloughy tumour about the size of a small orange projected from the general mass into the abscess; and still more to the right side another large tumour was perceptible, both from the front of the abdomen and at the bottom of the diseased mass of the intestines and stomach, having the duodenum, colon, and stomach adherent to the anterior surface. This was the only part of the whole disease which had not yet ulcerated, and it seemed to be composed of glands united together; it was soft and pulpy and of a light colour, like the usual appearance of fungus hæmatodes. The remainder, where ulcerated was also soft, and resembled very much the usual surface of a tumour composed of fungus hæmatodes when it has ulcerated through the common integuments.

\* Abdominal viscera.

† De Inflammatione Membran. p. 182.



CASE II.—Mr. C. æt. 59, a gentleman who had always enjoyed good health and was remarkably temperate in his habits, but much occupied by anxious professional business, consulted me in the month of November, 1825, being affected with pain in the region of the bladder, particularly felt after voiding his urine, which was high coloured and deposited freely uric acid. The warm bath and the use of soda and opium shortly relieved these complaints; a visit to the sea-side and the moderate use of tonics completely restored him.

About November 1826, he mentioned to me that he was occasionally troubled with water-brash, which he described as a small portion of tasteless fluid rising occasionally into his mouth, unattended by pain or any uneasiness whatever. His appetite was extremely good, sleep undisturbed; he had no pain in any part of his body. His pulse was not strong, but regular, and of natural frequency, and he described himself to be in good health. He was recommended twenty minims of *Liq. Potassæ* in lime water twice in the day, but the inconvenience appeared to have been so slight that he did not comply with the prescription.

On the 13th March, 1827, while visiting another patient in the family, I observed that Mr. C.'s countenance and manner betrayed considerable indisposition, and I inquired if he were suffering from return of pain in the bladder. He replied he thought he had taken cold, and that he was much harassed by business. He said he felt as if he required opening medicine. I ordered him an aperient and desired he would lie in bed in the morning that I might examine his abdomen, as on pressing him through his dress there appeared some tenderness present.

14th. The patient being in bed, the symptoms were as follow: bowels freely open from the medicines, dejections loose, but of good colour, pulse 100, extremely weak, urine very turbid, tongue red and shining, appetite good, great sensation of debility, with an exsanguine appearance of the countenance, the less remarkable as the patient had always been unusually pale.

About midway between the umbilicus and superior anterior spinous process of the left ilium, a tumour was observed of the size of a large orange, extremely hard, extending over about half an inch to the right side of the umbilicus, and an inch below it. This tumour was adherent to the integuments, was rather moveable, and there was considerable tenderness on pressure. Notwithstanding the size of the tumour, its tenderness, and its prominent figure, the patient, until my examination, was totally ignorant of its existence. The apparently rapid growth of the tumour, its hardness and irregularity, combined with the bloodless appearance of the patient, and the great and sudden loss of strength experienced, induced me to believe that the disease was of a malignant nature. A dozen leeches were ordered to the part, and a consultation took place in the evening with Dr. Nevinson. Dr. Nevinson was likewise of opinion that the

disease was of a malignant kind, but no decision could be formed as to which of the viscera it affected particularly. (*Hirudin. xij tumori; capiat Pil. Sapon. c. Opio gr. iij h. s.*) *R* Mist. Camph.  $\mathfrak{z}$ x. Sp. *Æther. Nitr.*  $\mathfrak{z}$ ss.; Confect. Arom.  $\mathfrak{D}$ j.; M. Ft. haustus 4tis horis sum. (Light nourishment.)

15th. A consultation took place with Mr. Brodie, who agreed in the opinion that the disease was fungus hæmatodes. The leeches were ordered to be repeated. Evaporating lotions to the tumour. The internal medicine to be repeated.

On the 18th, the tumour having increased, a consultation took place with Mr. Brodie and Sir A. Cooper. The latter gentleman was of opinion that the great intestine on the left side adhered to the parietes of the abdomen, that the inner coat had ulcerated, and a tumour was formed whose contents consisted of gas, ill-conditioned matter, and fæces. Poul-tices and fomentations ordered. The soap and opium pill repeated at bed-time. *R* Infus. Gentian. C.  $\mathfrak{z}$ x.; Infus. Rhei.  $\mathfrak{z}$ ij.; Pulv. Ipec. c. Opio, gr. iij.; Subcarbon. Sodæ exsicc. gr. v.; M. Ft. haustus t. die sumend.

23d. Some fluctuation being perceived in the tumour, an opening was made to the left; a little above the umbilicus with a lancet, about two ounces of fætid sanious pus escaped from the orifice. Some hemorrhage occurring, the pulse in the evening became extremely small and feeble, tongue red with a brown centre, countenance much sunk, bowels purged. *R* Pulv. Cret. C.  $\mathfrak{z}$ ss.; Confect. Arom.  $\mathfrak{D}$ j.; T. Opii  $\mathfrak{m}$ . v.; Mist. Camphoræ  $\mathfrak{z}$ x. M. Ft. haustus 4tis horis sumend. (*Vini Rubri*  $\mathfrak{z}$ ij ter in die.)

26th. The opening discharged freely, pulse 100, strength much improved, aphthæ in the mouth. *R* Infus. Cuspariæ  $\mathfrak{z}$ x; Confect. Arom.  $\mathfrak{D}$ j; Pulv. Cretæ C.  $\mathfrak{D}$ j. M. Ft. haustus ter die sumend.

The relief experienced by letting out the confined matter was of very short duration. The tumour enlarged as the cavity of the abscess filled up, and the condition of the patient on the 17th of April was as follows: The tumour occupies the whole of the umbilical region, being about six inches in breadth, and four in length. No pain whatever is experienced on pressure, or at any period. The cavity of the abscess filled up about one half. Bowels slightly relaxed. No vomiting or nausea. Tongue clean, less red and shining. Appetite good. Sleeps well. Pulse 100, weak. *R* Infus. Cascarillæ  $\mathfrak{z}$ x.; Canell. Alb. in Pulv.  $\mathfrak{z}$ ss.; T. Opii.  $\mathfrak{m}$ . iij.; Syrupi  $\mathfrak{z}$ ss.; M. Ft. haustus ter in die sum.

It now appeared expedient to endeavour by all the means in our power to check the growth of the tumour, and in such a case the various remedies which have been insisted on by authors, for promoting the dispersion or absorption of morbid growths, were fairly to be tried, however small the hopes of success which resulted from their employment.

Several blisters were applied in succession over the tumour, without affording any ad-



vantage. The tumour appeared inert, producing no pain on pressure, or during the whole process of digestion, which was uniformly to all appearance healthy, one natural evacuation being voided in the twenty-four hours; and when (which was a very rare occurrence) this was deficient, a small dose of castor oil relieved the difficulty. The only bad symptom was the sense of extreme debility, and occasionally slight syncope.

On the 20th of May, a drachm of weak mercurial ointment was ordered to be rubbed in over the tumour daily, and three grains of blue pill given at bed-time. The cascarrilla and canella, from which the patient expressed himself to derive relief, was continued. This course was persevered in for nearly three weeks, and given up without appearing to have in any way contributed to the diminution of the tumour, or the amendment of the patient's general health.

The action of iodine is at present little understood; but that it occasionally exercises very extraordinary power in the dispersion of morbid growths, is now generally admitted, at the same time that in the present state of our knowledge its apparent want of uniform success, and the terrible influence it exercises over the nervous system, even some weeks after its use has been discontinued, require great caution in its administration.

Half a drachm of the ointment of hydriodate of potass was rubbed in every night and morning, and five drops of the tincture given twice in the day for more than a fortnight, when the increased sense of fainting and diminution of the patient's strength obliged its discontinuance.

The beneficial effect occasionally produced by the internal use of the caustic alkali, especially in steatomatous tumours, suggested the propriety of employing this remedy. Twenty drops of the liq. potassæ were ordered to be taken thrice daily, in a little barley water, this quantity being gradually increased to twenty-five minims five times in the twenty-four hours, which was borne without the slightest uneasiness. During three weeks that the use of this remedy was continued, a sensible amendment was perceived. Strength increased; the skin became of a healthier colour and the tumour certainly was somewhat diminished. In consequence of this amended state, the patient left town for his seat in the country, in the middle of July. On the first of August he returned to London, having perceived an increase in the tumour during the preceding two days, and having experienced a return of the rising of tasteless fluid into his mouth, a symptom which had wholly left him for several months.

My attention having in the mean time been called to the case of Row, which I have first detailed to the Society, I was satisfied that the malignant growth was in the stomach itself, and accordingly informed the patient's friends. This opinion was confirmed in consultation by Mr. Brodie and Dr. Chambers. After the patient returned to London, the extr. conii

and the liquor arsenicalis were employed in full doses, but without any perceptible good effect. The patient continued to decline, his hands and feet were œdematous, and his strength became so greatly impaired that he required the support of considerable quantity of stimulants, in order to maintain life and warmth.

After growing weaker and weaker through the month of September, he expired on the 2d of October, without pain, having experienced a feeling of complete exhaustion, and presented an appearance of the utmost emaciation for several days previously.

The most singular circumstance attending this case was the perfect manner in which digestion was performed during the progress of so extensive a disease of the stomach. The patient's diet consisted of broth, arrow-root, plain animal food, and white fish, and as the disease advanced, he was permitted to drink weak brandy and water with his dinner, which added greatly to his comfort by counteracting the extreme sensation of debility. At no period of his disease did he experience any pain after taking food; at no period was his food returned by vomiting. The only circumstance which could draw the attention of the physician to disease of stomach was the water-brash, but this occurred rarely in very small quantity and was attended with no pain. The appetite continued natural until two days before death.

The body was opened twenty-seven hours after death by Mr. Brodie, assisted by Mr. Caesar Hawkins. On the external surface of the body several spots of purpura were perceived, and a tumour was easily felt through the parietes of the abdomen, with an opening in its centre, a little above and to the left side of the umbilicus, discharging some dark purulent fluid. The cavity of the abdomen contained about three quarts of water; on the removal of which, the tumour was found to be formed by the stomach, adhering extensively to the parietes, to which the transverse part of the colon and the omentum were also joined. The stomach was opened on the posterior part, and the cardiac portion and duodenum were found to be quite healthy, the pyloric half alone being the seat of disease. It appeared to consist of a thickening of the coats of this part of the stomach, in some parts above an inch in thickness, with an irregular tumour growing from its whole circumference, of the nature of fungus hæmatodes. The whole interior surface was ulcerated, and several portions of the tumour projected into the cavity of the stomach. The tumour was soft, and highly vascular in the inner part, and gradually became firmer and whiter towards the peritoneal surface, whence several white bands ran in an irregular manner towards the interior of the tumour. The anterior part of the stomach was the thickest, particularly where it adhered to the muscles of the abdomen; and in it several abscesses were discovered, one of the largest of which was the cavity in which the opening on the surface of the ab-



domen terminated. The œsophagus near its junction with the stomach contained a small cyst of fluid, resembling an hydatid in appearance, and of the size of a filbert. The liver was rather darker than usual, but otherwise healthy; except that in the left lobe several tubercles were observed of the size of a pea, of a white colour, and of the consistence of soft cartilage. All the other viscera appeared sound.

CASE III.—The following case I had an opportunity of observing under the care of Dr. Hewett, physician to St. George's Hospital, who has obligingly permitted me the use of his notes in his hospital case-book.

John Rae, æt. 40, applied to be admitted Wednesday, September 12th, 1827. About fifteen weeks ago, being in robust health, he fell suddenly on his back from a height, and was taken up insensible. He soon recovered his faculties, and did not appear to have sustained any serious injury. About twelve weeks ago, he experienced a difficulty in the digestion of his food. To use his own expression, "his victuals did not appear to digest properly, but to stop for three or four hours at a spot" which he pointed out, and which corresponded with the cardia; the food then passed onwards without being rejected by vomiting. These symptoms were removed by some pills, in the course of three or four weeks. Pulse 100, regular and soft; tongue foul. He has had no evacuation from his bowels since last Sunday week, with the exception of one costive stool, after having taken castor oil. On Saturday afternoon he fainted twice from weakness, not from pain, while making ineffectual efforts to pass the evacuation. (Capiat ol. ricini ℥ij. statim, et 4tis horis donec semel respond. alvus. Injiciat enemat. oleos. ℥ij. post horam unam. R. Mist. camphor. ʒxj.; sp. æther. sulph. ʒss.; syrupi ʒj. M. ft. haustus appropinquante syncope sumend.)

13th. Three evacuations from the medicine, of a dark muddy colour, but presenting no traces of blood. Urine reported to be high coloured, nearly resembling porter in appearance. Bowels have been torpid during the last nine or ten weeks, but he did not notice the colour of his evacuations. He does not now experience any pain, except on forcible pressure about the epigastrium. Towards the right as well as the left hypochondrium and umbilicus, there seems to be some induration of the stomach, and perhaps also of the liver. Pulse 100, regular, soft. Skin natural. Tongue muddy, no yellowness of conjunctiva; he has a peculiarly exsanguine appearance, but has never had any hemorrhage. That the tumour is of a malignant character, is rendered probable by the expression of countenance, the rapid emaciation, and general progress of symptoms. Capiat ol. ricini ℥ij. c. m. Injiciat enema oleosum vespere. R. Submur. hydrarg. gr. j; extr. conii gr. viij.; M. ft. pilula ij. 8vis horis sumend.

14th. The examination to-day leaves no doubt that scirrhus of the stomach exists to a considerable extent, more particularly affect-

ing the pyloric portion. Tongue clean and moist, his appetite is good, and he feels no inconvenience after swallowing his food. He was now ordered fourteen drops of the solut. hydriodatis potassæ (hydriod. pot. ʒss. aq. distill. ʒi.) every six hours. Extr. conii gr. vj 6tis horis intermedis; repet. enema oleos. interm. calomel. (Beef tea.)

He pursued this plan, augmenting gradually the medicine, on the 19th to twenty drops, on the 27th to twenty-four drops, with at least no disadvantage. His bowels were regular, he was entirely free from pain, and he relished his food. On the 1st of October he was attacked with diarrhœa, which caused the use of the solution to be suspended, and opiates substituted for it. The purging, though occasionally restrained, continued to increase, and he died, apparently exhausted, on the 15th of October.

In the different examinations which were made subsequently to the 14th of September, it was observed that a great mass of the tumour varied its situation according to the position of his body, descending nearer the umbilicus if he sat up in his bed, and nearer the right or left hypochondrium, according as he lay on his right or left side. Dr. Hewett also pointed out the peculiarity of the continuance of the appetite and the exemption from vomiting in this case, as he had done in the case of John Clapp, who had died some months previously, while under his care in the hospital, with a similar but still more extensive disease of the stomach and duodenum.

*Sectio Cadaveris.*—The greater part of the stomach seemed healthy, but at the pylorus a tumour was found, as large as a man's fist and nearly globular in shape, occupying the anterior and lower part of the pyloric extremity. A small part projected over and was attached to the duodenum, but most of the tumour formed part of the circumference of the stomach in the situation mentioned, leaving the posterior and upper part of the pylorus free from disease, and not even thickened. The tumour, near its circumference, was hard and white in texture, apparently attached only to the outer part of the coats of the stomach; but in the inner surface of the diseased mass the coat had ulcerated, and a sloughy mass was exposed having a cavity in the centre which communicated with the cavity of the stomach, with irregular projections of a dark brown or blackish colour. The arch of the colon adhered slightly to the tumour, but was unaffected by the disease. A portion of the œsophagus which was cut off with the stomach, and which was about one inch and a half in length, was very much thickened and hardened in its muscular texture, the mucous coat being still healthy, and the cardiac portion of the stomach was also free from disease where it joined the œsophagus.

The liver had a large quantity of soft white tubercles, with yellow portions intermixed, and in some parts more vascular than usual. Where they were distinct their diameter was one or two inches, and more vascular in the



centre; but many of these had coalesced, so as in some parts to lose the tubercular appearance. They were soft and easily broken down, and could readily be detached from the rest of the liver, which was quite healthy in appearance; and the whole liver being enlarged, the actual quantity of healthy structure was not much less than usual.

The transverse branches of the vena portæ seemed quite choked with a similar diseased structure, which adhered to the inner coat, and extended into many of the smaller branches, so that if a portion of tumour was torn, the vessels filled with the new structure could be separated from the actual tubercles, and were seen extending like cords into the healthy structure of the liver, although in a section it was difficult to distinguish the cut surface of the tumour in the vessels from the tumour which was external to their coats. It was difficult to see any channel by which the blood could have passed, so completely were the branches of the vena portæ obstructed; yet in the healthy part of the liver the vessels were seen to be still pervious.

In the last two cases, it is to be observed, that tubercles were found in the liver, in the second case in a crude state, and in the last in a very advanced stage of the development. These are exactly the tumours described by the French authors, M. Laennec and Andral, under the name of (*tumeurs encéphaloides*), and of the symptoms of which, during life, with the appearances on dissection, the latter author has lately given a very detailed description in his valuable work "*Sur les Maladies Abdominales*."

There can be little doubt that the disease in the stomach and that in the liver are of the same nature, modified only by the structure in which they are found, and (unlike true cancer, which appears often a local disease, affecting parts in juxta-position, and, secondarily, the constitution,) to be the result of the same action of vessels in different structures at the same time. This would appear from the following facts.—1st. By the observations made by Morgagni, Farre, Langstaff, Wardrop, Bayle, Laennec, and Andral, of the simultaneous occurrence of this organic disease in different viscera. Dr. Farre has related a case where tubera of a structure similar to those which I have shown to the Society were found in the brain, bronchial glands, liver, and kidney, in the same individual. M. Bayle relates an instance where he found them in the brain and lungs. In the collection of preparations of morbid parts in the possession of Mr. Brodie, there is a specimen of the fungus hæmatodes of the liver (*tubera diffusa*), scirrhus of the breast, and a disease of the uterus, apparently similar to what has been described by Dr. Clarke under the name of cauliflower excrescence, taken from the same individual. Another circumstance worthy of observation, in the third case, is the obstruction in the transverse branches of the vena portæ, by a deposition of matter similar to that which composed the tubera in the liver. In Mr. Langstaff's

excellent paper on fungus hæmatodes, in the eighth volume of the Transactions of the Society, several cases are related (pages 285, 304,) in which the veins in the immediate vicinity of the diseased structure were found choked by a similar deposition.

This subject, viz. the matter of fungus hæmatodes being found in veins unconnected with alteration of their coats, and in the centre of large coagula, consequently, probably, arising from an alteration in the chemical composition of the blood, has recently attracted the attention of the Académie de Médecine at Paris, in consequence of two papers on the subject by M. Velpeau.\*

At the meeting of the Academy M. Beclard stated that he had found this formation, in one case, in the interior of a clot which filled the heart and principal blood-vessels. In another case a similar mass was found filling the iliac veins and vena cava.

What, then, is the nature of the disturbance in the due performance of the laws of the economy, in its circulation, absorption, or secretion, which immediately precedes the formation of these diseases?

It appears to me to present none of the ordinary phenomena of inflammation, nor is its termination in any manner similar to the terminations of that morbid process as far as they are at present understood, as effusion, suppuration, deposition of lymph, or hepatization. It arises often without the unfortunate patient being aware of its commencement, and proceeds without pain, redness, or swelling, or heat of the affected part, these not being observed until its size, or encroachment upon neighbouring parts, produces secondary attacks or alterations in contiguous textures, which rouses the attention of the patient. The exsanguine appearance of the patient, even at a very early period, and the uncommon depression of vital power which he experiences, would lead to the belief of a constitutional cause, either an alteration in the constituents of the blood, from which these diseased products are separated by the ordinary secreting power of vessels, or from a morbid alteration in the secreting powers themselves, or from both of these causes.

Before concluding, I may be permitted a few remarks on the treatment of a disease, which consists only, in our present state of knowledge, in the alleviation of pain, or in directing means to retard its progress. In several cases I have found pain and vomiting, when they attend this affection, effectually relieved for a considerable time by the administration of the prussic acid.

CASE I.—A middle aged woman was attacked with all the symptoms of this complaint; constant pain, aggravated on taking either food or medicine, which resisted all usual remedies. Venesection, leeches to the pit of

\* *Revue Médicale*, February and March, 1825.



the stomach, blisters, full doses of conium, hyoscyamus, belladonna, and opium, failed in giving the smallest relief. Two minims of the prussic acid given twice in the day procured a calm of a week's duration, and afterwards, whenever repeated, some relief was obtained. The dose was carried up to  $\mathfrak{m}$ . iv. thrice in the day, beyond which quantity it appeared dangerous to employ it.

CASE II.—A woman, æt. 45, who had been exposed to severe affliction, complained to me of pain in the region of the stomach, aggravated on taking food; constant vomiting; a hardness was perceptible in the great curvature of the stomach: no ordinary preparation had relieved her sufferings, which had lasted four months. Two minims of the prussic acid, directed thrice daily, had the effect of producing an entire suspension of the symptoms during a fortnight.

It ought to be stated here, that the preparation used was that known under the name of Scheele's medicinal acid.

In cases where pain and vomiting are not present, I should be induced to employ large doses of the liquor potassæ, from the advantage derived temporarily in the second case, even at an advanced period. I need scarcely observe, that this remedy is only adapted to similarly insensible tumours. Rest appears to be essentially necessary, exercise uniformly promoting the rapid increase of the disease.

From the *Lancet*.

ON THE SAFETY AND NECESSITY OF AMPUTATION IN SPREADING MORTIFICATION. By GEORGE BUSHE, M. D. of the Royal College of Surgeons in Ireland, and Assistant Surgeon to the Forces.

The catalogue of surgical writers can boast of no better names than Pott and Sharp; to them we are indebted for many sterling improvements in surgical science; but yet these celebrated men committed errors, which have been partly rectified by succeeding authors. When we read their sentiments on the operation of amputation for mortification, we cannot but regret that they did not adopt a more impartial line of research; which, when aided by the vast experience they must have enjoyed, would have induced them to alter what they wished might be received as an axiom, viz., that amputation should never be had recourse to, in mortification, until the deadening process had ceased, and a line of separation had been established. To substantiate this maxim it was urged, that no matter what care might be taken to distinguish between the diseased and healthy parts, the operator very likely would be deceived, by finding that, though the integuments appeared to be, and indeed were perfectly sound, the deeper-seated parts, as the cellular tissue, and muscles surrounding the bone, were in a state of gangrene; and that if even the divided parts were healthy, the same morbid affection would, in all probability, attack the stump, and soon

prove fatal; finally, that the shock of the operation, when added to the debility produced by the disease, would seriously endanger the patient's life. These opinions, derived from such high authority, naturally impressed the surgeons of England with a determination only to amputate for mortification, after a line of separation had been established;\* and even in the present day the same doctrine is publicly inculcated, by some of the first teachers in the empire; and it is merely from a conviction of the unstable foundation upon which this doctrine has been erected, that I am induced to write this short paper; which has for its object to prove the necessity there exists for, and the safety that may follow amputation, in cases of spreading traumatic gangrene.

B. Larrey, in his "*Memoirs de Chirurgie Militaire*," tells us, that at Toulon, in 1796, he amputated in a case of spreading traumatic gangrene, with the best success; and that in 1801, at the siege of Alexandria, in Egypt, he again repeated this practice with the same success; and that from this period many of the surgeons of the first rank, in the French army, pursued his example; and, from their experience, we must conclude, that so far from being a hazardous, it was generally a safe, line of practice. But the Baron is not the only person who has recommended this derivation from the maxim of Pott and Sharp, for Miher, who wrote in 1799, distinctly says, that mortification succeeding to gun-shot wounds, is the only case that requires *immediate* amputation; and Mr. Lawrence and A. C. Hutchison, both relate successful cases where amputation was performed for traumatic mortification, before a line of separation had been established.

I have now twice observed amputation terminate favourably, when performed for spreading traumatic gangrene; one case was operated on by the late Professor Todd; and the other was a patient of my own. The subject of Mr. Todd's operation was a wretched woman of the town, about 25 years of age, and greatly emaciated by dissipation; she was admitted into the Richmond Hospital, Dublin, in the summer of 1823, on account of a compound dislocation of the left ankle-joint, attended with extensive laceration of the ligaments; to which, in the space of eighteen hours, succeeded spreading mortification, accompanied with general sinking of the vital powers. On the beginning of the third day, amputation was performed below the knee; and a complete recovery followed.

The other case, that which fell more im-

\* No person can more admire men, who have improved science and literature, than I do; but I could wish that others would agree with me, in not even receiving, as correct, without a strict inquiry, matter from the most renowned in our profession; for I do think, that many unpretending individuals may detect serious errors in the writings of the most notorious members of the faculty.



mediately under my own care, and altogether bore a disheartening aspect, I shall, by way of concluding this paper, detail more at length.

Sweetman, æt. 28, of sallow complexion, and delicate frame, by trade a labourer, on the 12th, Dec. 1827, whilst engaged in attending masons on a scaffold, 47 feet high, (near Chatham) fell to the ground; by which he sustained the following injuries, viz. dislocation of the right femur upwards and backwards; dislocation of the knee backwards, and compound luxation of the ankle-joint of the same member. He was immediately removed to the parish hospital, where he was soon visited by surgeons Hope and Bryant; who reduced the luxation of the knee, closed the wound of the ankle, and placed the limb in the semi-flexed position, having previously made many fruitless attempts to reduce the luxation of the hip. After reaction had taken place, blood was freely abstracted from the arm, and subsequently the usual treatment was steadily pursued. From the date of the accident, until the 15th, he went on favourably; but at this period he complained of excruciating pain; the limb became tumid, and a black spot appeared in the neighbourhood of the wound. Bark and opium were administered in large quantities, but they did not appear to have any beneficial effect, as the deadening process extended, accompanied with dreadful suffering; and on the evening of the 18th, (when I first saw him) the medical gentlemen above mentioned, and Messrs. Robertson and Tribe, were present. When we found that the limb was quite livid, even above the knee, and covered with large vesicles containing a dark-coloured fluid, attended with great tension and tumefaction of the thigh, and an emphysematous condition of its cellular tissue, and also that of the lower part of the abdomen. His face was pallid; skin rather cold; forehead and breast covered with a clammy perspiration; tongue tremulous; and his pulse weak, soft and quick. Seeing that death would certainly take place in a few hours, as the mortification was extending rapidly towards the trunk, and the vital powers quickly sinking, nothing appeared to forbid the only alternative, (amputation) but that the shock of the operation, when added to the functional depression under which he laboured, might prove suddenly fatal.—However, as his friends were urgent for the operation, I immediately removed the limb below the trochanters; during the operation the loss of blood was very inconsiderable, and no further depression of the vis vitæ ensued. He had a large opiate, and warm beef-tea *ad libitum*. On the following day, when I visited him, I was informed that he had a good night, having slept seven hours; his skin was natural; pulse more full, firm, and less quick. The stump was free from unnatural tension, or other untoward appearances. It would be useless to follow this case further, as it presented nothing remarkable; the stump healed rapidly, and he was soon discharged the Hospital, well.

Chatham, March 1, 1828.

VOL. II.—S F

From the Repertoire General de Anatomie, &c.

OBSERVATIONS POUR SERVIR A L'HISTOIRE DE L'HYPERTROPHIE DU CERVEAU. Par M. DANCE, Agrégé à la Faculté de Médecine de Paris.

Hypertrophy of the brain has been recently treated of by some authors as a primitive disease of that organ; but are we possessed of any well defined examples of this affection? Is the brain, surrounded as it is, by an unyielding osseous envelope, susceptible like other viscera of a morbid augmentation of nutrition? What are the anatomical characters of this lesion? and what the symptoms by which it is accompanied? These are queries which remain to be solved, and which lead to the supposition, that the disease in question has been admitted rather as a possible occurrence, than as a demonstrated fact. By hypertrophy we do not mean to designate the augmentation of volume resulting from inflammation of the brain, from serous or sanguineous congestion of its substance, or from extravasation into its cavities. In these cases, the afflux and stasis of the fluids increase the apparent volume of this viscus, but they are not incorporated or identified with its substance, as happens in genuine hypertrophy, which consists essentially in a preternatural increase, either in number or volume, of the constituent molecules belonging to each organ. Now, the brain is actually susceptible of undergoing this aberration of nutrition, and consequently of acquiring a volume disproportionate to the capacity of its osseous covering. The cases which follow appear to establish the reality of the disease, but are not sufficiently numerous to furnish materials for a complete history; they will serve as a foundation upon which a superstructure may be raised, as new facts accumulate; we shall content ourselves with the reflections and deductions which immediately flow from them.

Case 1.—Lespinsats, a lapidary, æt. 26, was admitted into the Hôtel Dieu, March 11, 1826. He was a man of ordinary stature and regular conformation, hair black, complexion pale but clear, muscular system not very strongly marked, intellectual qualities well developed. At the age of 14 he received a blow with a hatchet on the top of the head while in the act of boarding a vessel; he was not deprived of consciousness at the time, but some days afterwards was attacked with delirium, and remained seven months indisposed from the consequences of the injury. (No mark of the injury is at the present time perceptible.) From this period, but only in very cold weather, he has been liable to pain in the head, to mitigate which, and to guard against the cold, he habitually uses a fur cap. Six years ago he was admitted into the Hôpital St. Louis for prurigo, of which he was entirely cured by the warm bath. Two years later he entered La Charité for what was called a swelling of the face, arising probably from erysipelas; he was discharged cured at the expiration of fourteen days. He asserts positively that he has never contracted any



venereal disease, or laboured under any chronic affection of the skin, such as dartres. During the last year he has been troubled with epistaxis, occurring two or three times a week; the hemorrhage was so considerable about four months ago, that the application of ice to the head was necessary to arrest it; since which period, the hemorrhage has occurred less frequently, and in diminished quantity, without any augmentation of the pain of the head. The patient pursued his ordinary avocations, had a good appetite, and his health was only interrupted during cold weather by the pain just mentioned. Three weeks ago he was attacked with headach, tolerable in the first instance, but soon accompanied with troublesome throbbing, and a humming noise in the ears; his appetite failed, bilious vomitings supervened, and he with difficulty continued his employment fifteen days longer. During the last five days the headach had greatly increased in intensity, accompanied with constant and harassing insomnia. Five leeches were applied behind each ear, and twelve papers of calomel, the dose of which is unknown, was administered.

*Symptoms.*—Mercurial fetor of the breath, and whitish superficial ulcers upon the gum of the lower jaw, arising probably from the calomel; violent frontal cephalalgia, without elevation of the temperature of the skin, or flushings of the face; pulse small and slow; anxiety and continued complaints relative to the pain of the head; tongue moist and natural; constipation. *Prescription*—*Barley water, pediluvium, enemata, and diet.*

On the evening of the 12th, he had a violent paroxysm of oppressive headach, during which he was continually changing his position, and crying out *my head, my head*; he complains of coldness of the extremities, the eyelids are closed as if to exclude the light, his pulse is small, slow, and somewhat irregular; the surface preserves its ordinary temperature, the face is neither hotter nor more flushed than ordinary. *Sinapisms to the feet.*

13th.—Severe pain in the head, with violent exacerbations, in the intervals of which the pain is supportable, but never ceases entirely; he complains of a sensation like that of a stream flowing in the interior of the cranium, with humming in the ears; the eyelids are closed, skin cool, pulse small, slow, and slightly unequal; tongue large and moist; breath less fetid than before; the ulcerations are healing. *Pediluvium with mustard, purgative enemata, diet.*

In the course of the day two or three similar paroxysms occurred with equal violence; toward evening, the pulse beat only from 45 to 50 pulsations per minute.

14th.—Groaning; complete insomnia during the whole night, same slowness of pulse, forcible contraction of the eyelids and all the superior part of the face. At nine in the morning, a paroxysm supervened, similar to those of the preceding day; the patient was incessantly seeking relief in change of posture; sometimes he sat up in bed; at others, he

pressed his forehead against the pillow, and appeared more calm when strong pressure was made upon his head; he uttered cries expressive of pain, and believed himself doomed to certain destruction; his cheeks were rather more flushed than yesterday, but the temperature of the skin and slowness of the pulse remained as before. *Warm bath, with cold effusions upon the head, infusion of linden-flowers and orange leaves, pediluvium with mustard, diet.*

The pain was somewhat mitigated in the first instance, by the cold effusions, but returned with increased violence when the patient had resumed his position in bed.

18th.—Short sleep, abatement of the intensity of the headach, same slowness of pulse. *Cold compresses to the head, pediluvium, enema, ptisan as before.*

The succeeding days, the paroxysms appeared to diminish in violence, the patient obtained some moments of repose, and complained less vehemently. But on the evening of the 20th, a paroxysm occurred as violent as any of the preceding; his pulse was feeble, and beat only fifty strokes a minute; this state continued through the whole night. On the 21st he complained of intolerable suffering in the interior of the head, he was unable to bear the light, the pupils were contracted, pulse slow; the temperature of the skin gave no indication of febrile excitement.

The bath, with cold effusion over the head, was again proposed, the preceding bath having been followed by some alleviation. At three in the afternoon he walked to the bath and remained in it three quarters of an hour; a single cold effusion was made upon his head. At his exit from the bath he swooned, fell into the arms of his attendants, and died in less than fifteen minutes. The house surgeon, suddenly summoned to his assistance, found him agitated by some convulsive movements; the pupils were largely dilated.

*Necropsis 41 hours after death.*—Notwithstanding the long space of time which had intervened, the rigidity of the body was very great. There was no trace of fracture of the skull, and the head presented nothing remarkable in relation to its form and dimensions. The dura mater was applied upon the cerebral substance, and appeared to be distended beyond measure by the swelling of the subjacent parts; its colour was generally violaceous; very little blood was found in the sinuses; the edges of an incision, made into this membrane, separated spontaneously, and permitted the brain to protrude in form of a hernia. All the circumvolutions of the brain, especially at its superior part, had acquired a great increase of size, almost double their natural volume; they were flattened, and so crowded one against another, that the intervals which naturally separated them were with difficulty distinguishable, so that the convexity of the hemispheres presented an uniform surface, without either elevation or depression. The arachnoid and pia mater, intimately adherent to each other, and to the circumvolutions, appeared thinned



by their close approximation; these membranes were not injected, and could not be detached from their adhesions without rupturing them. The whole substance of the brain resembled the white of an egg hardened by boiling; its weight and density were considerable; it did not yield upon pressure; subjected to moderate extension, it became elongated without rupture, and returned upon itself like an elastic body when the extending force was withdrawn; no trace of vessels, or red points were perceptible; on the contrary, all the cortical substance appeared paler, and the medullary matter whiter, than natural. Not a drop of serum was found in the ventricles; their cavities were diminished to half their ordinary size, by the approximation of their parietes. Lastly, the brain and cerebellum having been removed, not a drop of fluid was found in the cranial fossæ; all the surface of the arachnoid was as dry as parchment. The tuber annulare participated, in a slight degree, the condition of the brain, but the cerebellum and spinal marrow presented nothing unusual in their volume, consistence and colour. The other organs were in a state of perfect integrity.

This disease is very distinct from any other cerebral affection hitherto described, and assuredly merits the name of hypertrophy of the brain, if regard be had to the fundamental characters of the lesion. Augmentation of volume, of weight, and of consistence, without apparent disorganization, are the characteristics generally assigned to hypertrophy, and all these phenomena were present in the case narrated. The brain had acquired such an increase of volume, that after having accurately filled all the cavity of the cranium, it had violently reacted upon its parietes, as is evinced by the flattening and intimate approximation of the circumvolutions, the coarctation of the ventricles, the thinning of the membranes, the contraction, and even the occlusion of a great number of cerebral vessels, a circumstance which may serve to explain the dryness of the arachnoid, and the absence of injection or of red punctation of the whole cerebral mass. This state of condensation, taken in connexion with the increase of the constituent molecules of the brain, will account also for the increased specific gravity which this viscus presented.

But what connexion can be traced between this singular aberration of nutrition, and the symptoms which we have observed? Does it not seem, in considering the importance of the functions of the brain, that intelligence, mobility, and sensibility, should have been greatly disturbed? The patient, notwithstanding, experienced no considerable derangement of the faculties. Shall we say that this aberration of nutrition, being only an exaggeration of the natural condition, must not be assimilated, in regard to its effects, to changes which are the consequences of a process essentially morbid? Shall we say, moreover, that the pressure which resulted from this preternatural increase of the brain, acting very gradually, like certain tumours, which are developed within the cranium,

ought to be insensible during a long space of time? Or that this pressure, exerting itself equally upon all parts of the brain, should have induced general paralysis, almost immediately followed by death? These explanations, however, will not appear very satisfactory, when we shall have compared the preceding case with those which are still to be related. We need not be surprised at the extreme violence of the pain, when we reflect on the great constriction, amounting almost to strangulation, which the brain must have undergone. Does it not appear that the patient endeavoured to lessen distention excited by the brain against the parietes of the cranium, when he sought relief by forcibly pressing his head against the pillows? Do not the slowness and smallness of the pulse indicate that the nervous influence, necessary to the continuance of the circulation, was diminished by this state of compression?

What account shall we render of the previous history given by the patient? Did not the blow upon the head, which he received at the age of 14, induce a morbid predisposition in the brain, although it left no impression upon the bones of the cranium? Does not the headach, which from this period made its appearance, indicate the ancientness of the disease, and the slowness of its progress? Did not the affection of the face, for which he was treated during fifteen days at La Charité, concur to augment this determination towards the encephalon? Lastly, does not the epistaxis to which he was subject, point out a congestive tendency towards this part, and was not the aggravation of the symptoms the consequence of its sudden suppression? The influence of all these causes appears to us very probable, and from their *modus operandi*, one would be led to suppose that the brain had long been the seat of a chronic inflammation, or rather of a state of sur-excitation, suited to accelerate its mode of nutrition; for true inflammation ordinarily presents other characters, and we believe that the alterations of the assimilative function are not absolutely identical with those of inflammation, although both may recognise the same causes.

However that may be, in proportion to the rarity of a disease should be our endeavours to discover its distinctive symptoms; the following are those which it appears to us should be taken into consideration in the present instance: the direct or indirect and protracted action of several causes upon the brain, cephalalgia returning in violent paroxysms, during which the patient uttered cries and groans, sunk his head in the pillows, and was incessantly changing his posture; a cruel and harassing insomnia; a pulse slow, small, and sometimes unequal, descending as low as 45 or 50 pulsations in the minute; contraction of the eyelids, as if to prevent the admission of light, while neither the temperature of the skin, nor suffusion of the face, gave any indication of determination to the brain.

As distinctive symptoms, however, these do not appear to possess much importance; seve-



ral of them are found in other diseases, and we frankly avow that to us they appeared to indicate a fungus of the dura mater, or some other tumour pressing against the parietes of the cranium; moreover, the following cases teach us that alterations identical in their nature, do not always give rise to the same phenomena.

*Case 2.*—A young man, æt. 24, of ordinary stature, and apparently lymphatic temperament, was admitted into the Hôtel Dieu, January 15, 1823. His physiognomy, his expression and his manners, announced some degree of stupidity and idiotism; he answered slowly and in monosyllables to all our questions, and his replies were rarely correct; he complained acutely of his head, but his complaints were only transitory; he had no fever, his pulse even appeared slower than natural, and there was no derangement of any function except that of intelligence; sometimes his thoughts appeared to ramble, and he spoke when alone, of things relating to his occupation, as if some one were present to reply to his questions; most commonly I found him sleeping, hidden beneath the bed clothes, awakened with difficulty, and regarding me on such occasions, with an air of imbecility; a head also badly organized, was little adapted to enlighten us respecting his previous history. His mother came on one occasion to the hospital, and stated that he had not been *a very intelligent man*; that he had never given signs of complete derangement, that he had never been attacked with convulsions, but that he frequently complained of his head; and lastly, that he had been fifteen days in the condition above mentioned. Some antispasmodic medicines were given, a blister was applied to the nape of the neck, and for some days he appeared to grow better. His physiognomy was more open, he left his bed, walked through the hall, ate with appetite, and conversed very rationally with his comrades; he had no fever.

On the sixth day of his admission, he was suddenly attacked with convulsions, with rigidity of the extremities and grinding of the teeth: we were sent for immediately, and upon our arrival, found that the paroxysm had ceased, it was not protracted beyond three minutes; the patient was composed, and complained only of soreness of his extremities. The two following days, he experienced five similar paroxysms, occurring both during the night and day; they were preceded by copious vomitings of greenish matter, and did not last longer than the first. (Twenty leeches were applied to the mastoid processes, and sinapisms to the legs.) The last paroxysm made its appearance on the morning of the ninth day: there was general relaxation, flaccidity and insensibility of the extremities, profound coma, dilatation of the pupils, stertorous respiration, and occasionally convulsive agitation of the extremities; this state of things continued during the day, and terminated in death at seven in the evening. Three hours before, we visited him, and found him very nearly in the same condition; the right eyelid had fallen down, and

the left was elevated, the pupils were insensible and largely dilated, noisy respiration, coldness of the extremities, the inferior, were so rigid, that they could scarcely be flexed; a frothy saliva issued from the mouth, and lastly, the pulse could not be felt.

The body was examined twenty-four hours after death; I shall only point out the principal circumstances which were observed. The meninges *applied immediately upon the brain*, appeared too small to contain it. All the circumvolutions of the brain presented a *very marked flattening*, and so closely were they approximated, that they appeared glued together. The substance of the brain itself was *very firm and compact*, such as it appears when prepared for anatomical demonstration; it presented also a *remarkable dryness*; neither *serosity* nor *red-dish points* were observed upon the surface of incisions made into its substance; its colour was of a *duller white* than ordinary; no fluid was found in the ventricles, nor throughout the great cavity of the arachnoid; no other alteration was perceptible. The cerebellum retained its natural consistence; the spinal marrow was not examined; all the other organs were sound.

We had placed the preceding, in the number of anomalous cases, and at the period when it occurred, were unable to determine to what species of disease the symptoms and lesions just described, should be referred; we even omitted to speak of the condition of the meninges, and to note the dimensions of the ventricles. It is evident, however, that the anatomical characters of this disease, are entirely similar to those which we have indicated in the preceding case. In both, the same expressions are employed to designate them, and in both we find flattening of the circumvolutions, induration of the cerebral substance, dryness of its parenchyma, absence of red points where incised, and lastly, a duller white than ordinary; an additional proof is found in the healthy condition of the cerebellum in both instances, certain evidence that the induration of the brain was not a natural phenomenon. In these two cases, the whole substance of the brain was attacked with hypertrophy, a circumstance which should be particularly noted, for it sometimes happens that partial indurations are found, the consequence of inflammation, excited especially by the development of accidental tumours of very slow growth; but in such cases, the brain surrounding the indurated points will sometimes be found to have undergone the softening process, and the whole cerebral mass will never be found to have experienced such a homogeneous alteration. Admitting that inflammation is the cause of this alteration, it must also be admitted that it implicated at the same time the whole substance of the brain, affecting every part in the same manner and same degree, notwithstanding the difference of anatomical composition. Now it is not thus that inflammation proceeds. In the same organ, and especially in one so complicated as the brain, congestion, softening, suppuration and



induration are frequently all observed together. These considerations appear to us well adapted to elucidate the question, whether the lesions just described belong immediately to inflammation, or are the consequence of the perversion of the nutritive function. On the latter supposition it will be readily conceived how the brain, subjected to an uniform assimilative movement, may undergo an increase, and consequently acquire a consistence, equally uniform, if the superabundant materials of nutrition flow into its substance, an effect which it is difficult to connect with a cause so variable as inflammation.

But if, in both these cases, the lesions have been similar, the symptoms presented some differences which it may be useful to point out. Thus the first patient complained of constant pain in the head, subject to violent exacerbation; the second, while in the hospital, complained only temporarily of this pain; one appeared to enjoy the free exercise of his intellectual faculties, the other had a stupid expression, he was accounted a man of limited intelligence, and this state appears to us more accordant with the nature of the lesion. The latter experienced, several days before his death, several attacks of convulsion attended with loss of consciousness, in one of which he died; the former had no convulsions till the moment of his death. But along with these differences we also find some points of resemblance. Both complained of long continued pain in the head, transitory, but subject to return; and this paroxysmal exasperation of the disease appeared toward the conclusion, in one case, under the form of violent exacerbations in the cephalalgia, and in the other, under that of convulsive paroxysms; in both instances, bilious vomiting made its appearance some days before death, a symptom common to many cerebral affections; in both there was a remarkable slowness of the pulse, and death occurred unexpectedly in the midst of convulsions. We may add, that they were nearly of the same age, and endowed with similar constitutions; that in one the disease appeared to succeed to causes sufficiently manifest, and that in the other it arose spontaneously.

This memoir had been written for some time, and we had, the last year, communicated it to the Société Anatomique, when glancing over the *Journal de Clinique*, (tome 1er, No. 87,) we observed a case analogous to those we have just related; an analysis of it is given here in order that a comparison may be instituted between them.

[Here follows an account of the case already detailed in the *Journal of Foreign Medicine*, Vol. I. page 476, after which Dr. Dance continues.]

In this case also, the changes observed on dissection were characteristic of hypertrophy of the brain. The patient had for several months experienced a progressive derangement of the intellectual faculties, very analogous to the natural stupidity of the subject of our second case, but he had never been subject to convulsions; he was suddenly attacked with almost universal

paralysis of sensation, which continued for several days, an affection which did not supervene in the other cases till the last period in existence; lastly, no mention is made of pain of the head, or slowness of the pulse, symptoms so prominent in the cases which we have related; it should be stated, however, that the patient was seen only a few days before his death, and that very little information could be obtained of his previous condition.

The following case recently occurred in the Hôtel Dieu:—

A painter, æt. 30, of an athletic constitution, was transported to the Hôtel Dieu, March 15, 1828, a prey to epileptiform paroxysms, which recurred three or four times in the course of the day. We saw him on the morning following his admission; he appeared stupidified, spoke with remarkable slowness, and with extreme hesitation, apparently arising from defect of memory, for he was long in preparing his replies, and repeated them variously as if to assure himself of their correctness. He did not comprehend all the questions which were addressed to him, but gave us, notwithstanding, information conformable in some points to that which we obtained directly from his wife. His pulse was elevated and frequent, countenance flushed, the skin hot, respiration interrupted by involuntary sighing; there was no deviation of the labial commissures, or paralysis of the extremities.

During the last six years he had frequent attacks of *hemorrhage*, (*coups de sang*,) from the head; from time to time he was affected with *stunnings*, (*etourdissements*,) which were protracted to three or four minutes, when he lost the use of his senses, and resembled a man *completely stupid*. About three years since, having received a fall from the fourth story of a house, these stunnings were converted into genuine epileptiform paroxysms, recurring at first after long intervals, which afterwards were so much shortened, that he experienced four or five attacks in the course of the same day. His character was habitually sombre and taciturn; he was benumbed, (*engourdi*,) and frequently complained of headache and pain in the stomach. Venesection always had the effect of mitigating the paroxysms, and diminishing the frequency of their recurrence, while they were as invariably exasperated by the spirituous potations to which he sometimes resorted. On the 12th of March, three days previous to his admission, having drunk two glasses of punch, he was attacked the following night with the most violent convulsions. A physician was called in, who directed the application of twenty leeches to the epigastrium, from which the patient derived no advantage. He was bled on his entrance into the hospital, but the loss of blood appeared to aggravate his symptoms. During the night of the 16th three paroxysms followed each other in rapid succession; the patient uttered a single cry, his whole body became rigid, and his eyes were directed convulsively upwards; from the statement of the assistants,



these paroxysms strongly resembled those of epilepsy.

On the morning of the 17th, the patient had an alarmed expression of countenance; he did not reply to the questions put to him, and soon fell into a comatose condition. There was general loss of sensation and motion, eyelids closed, pupils contracted, mouth half open, tongue turned upwards with its point directed to the arch of the palate, stertorous respiration, profuse perspiration, pulse accelerated, exceeding 140 strokes in a minute, occasionally tension and rigidity of the extremities, followed by general collapses; death took place at 10, A.M.

The body was examined at 9, A.M. of the following day. The cadaveric rigidity was considerable; no trace of injury was perceptible on the cranium, with the exception of a cicatrix, limited to the integuments of the right side of the forehead. The bones composing this cavity were from four to five lines in thickness, and equally solid throughout; the external surface of the dura mater was traversed by numerous ramifications of the meningeal arteries; a considerable quantity of blood was found in its sinuses; it accurately enclosed the whole mass of the brain; examined on its internal surface it presented a general violaceous aspect, arising from its transparency, for this appearance was chiefly observed along the course of the subjacent vessels, which were filled with blood. The arachnoid presented a degree of aridity truly remarkable; not a drop of serum was found in all its cavity, neither in the ventricles, at the base of the brain, nor at the commencement of the spinal canal. The pia mater was intimately adherent to the substance of the brain, and ruptured very easily; all the circumvolutions were uniformly flattened and approximated to each other, so as to leave no interval between them.

The brain was apparently not so readily extensible as usual, but was not firmer upon pressure; it was neither moister nor drier than natural; the incisions, however, which were made into its substance were clean, and their angles could be maintained open without breaking them; some red points were perceptible, but their number was not considerable. The ventricles were dry and their parietes in contact with each other, without being, however, sensibly contracted. Nothing unusual was observed in the tuber annulare and cerebellum. Not a drop of fluid flowed from the spinal canal when the subject was stood upon its head; the medulla preserved its natural consistence, but opposite the second lumbar vertebra, traces were observed of an ancient fracture of this bone, which was flattened, and the spinous process was wanting, having probably been absorbed. At this point the vertebral column was slightly inclined forwards; towards its termination the spinal marrow appeared slightly softened; this fracture was probably occasioned by the fall to which we have alluded. All the other organs were sound, with

the exception of the stomach, which was slightly injected.

Apprehensive of being led astray in pursuing an unknown route, we are not certain that this case should be ranked with those which we have before related, but we deem it worthy of attention in itself, although the resemblance is not absolutely strict. Admitting its close analogy to epilepsy, a disease which is still a problem in pathological anatomy, it may be asked whether the condition of the brain and its membranes does not account for the phenomena which we have observed; whether this condition has not some relation to that which we have described as characteristic of hypertrophy of the brain? Does not the uniform flattening of the circumvolutions indicate that the substance of the brain had experienced a considerable turgescence, an augmentation of volume disproportionate to the capacity of its envelopes? Would not the ancients who employed the words *strictum* and *laxum* to explain the origin of many diseases, have seen in the dryness of the cavities of the brain and the rigidity of its fibres, the cause of the convulsions? It is true, that the consistence of this organ differed little from what is ordinarily observed, but may not hypertrophy present different degrees, according to the period of its duration? Shall we say, on the contrary, that the epileptic paroxysms to which the patient had long been subject, had, by *producing congestion* in the brain, deranged its mode of nutrition, and that consequently they were rather the cause than the consequence of the alterations which we have described? Would it be unreasonable to suppose that the bones of the cranium, ossifying prematurely and becoming preternaturally thickened, opposed the free development of the brain, by encroaching upon the cavity in which it is contained? We propound these queries, confessing, at the same time, our inability to resolve them; it may, however, be remarked, that the habitual torpor of the patient, the frequent headaches which he experienced, the state of stupidity in which he was found by us, together with the convulsions which terminated his existence, bear a strong resemblance to the symptoms observed in the patients attacked with hypertrophy of the brain.

*General conclusions.* It follows from the cases which we have related, 1st, that the brain is susceptible of a morbid increase of nutrition, characterized by the flattening and approximation of its circumvolutions, the coarctation of its ventricles, a preternatural consistence and whiteness of its medullary and cineritious substance, and a remarkable aridity of its parenchyma and of the cavity of the arachnoid, the texture of this viscus not appearing sensibly altered; 2d, that this hypertrophy has been invariably observed involving the whole mass of the cerebrum to the exclusion of the cerebellum; 3d, that far from augmenting the energy of the brain, it tends on the contrary to diminish, pervert, and suspend it, by reason of the pressure which it necessarily occasions against the parietes of the cranium; 4th, that the symp-



toms of this hypertrophy having varied in different subjects, they cannot yet form the basis of a precise diagnosis.

Nevertheless, this affection appears to develop itself very gradually under the influence of very obscure causes; as predisposing, we may mention, adult age (all our patients were from twenty to thirty years of age); and as exciting causes, contusions of the head, and frequent determinations towards this part, of which the first and fourth cases are respectively examples. But notwithstanding that all these causes appear to act in a phlogistic manner, we are inclined to the belief, from reasons elsewhere exposed, that this disease appertains essentially to derangement of the nutritive function. It makes its appearance by violent cephalalgia, subject to exacerbations, (first case), an obtunded condition of the intellectual faculties, (second case), a perversion of the same faculties, (third case), frequent stunnings accompanied by stupor, (fourth case); at a later period it gives rise to repeated attacks of convulsions, (cases second and fourth), or else it suddenly produces an almost total paralysis of sensation and motion (third case). The pulse is slow, and the temperature of the skin natural (cases first and second). Lastly, death unexpectedly supervenes during a paroxysm of convulsions, as occurred in the first, second and fourth cases.

This rapid analysis of the symptoms of hypertrophy of the brain, a disease which, in common with the greater number of those affecting this viscus, appears to be variable in its symptoms, will serve rather to indicate, than to supply the deficiency in our diagnosis. It is hoped that the cases which we have related will tend at least to evince the necessity which exists for further investigation.

From the Edinburgh Medical and Surgical Journal.

#### ON THE POWERS WHICH MOVE THE BLOOD IN THE CAPILLARY CIRCULATION.\*

In the work now quoted, which we believe is hardly known in this country, are contained some very curious experiments and speculations on the nature of the force which moves the blood in the capillary vessels. As the subject is one of much attraction at present, —when so many theories, all said to be founded on the basis of facts, have been in vain conceived with the expectation of accounting for the phenomena, —we are sure the reader will not regret the opportunity of becoming acquainted with another hypothesis, which certainly has the merit of novelty to recommend it, and which is also deduced, whether legitimately or not we shall not inquire, from facts of extreme interest, of unquestionable accuracy, and, so far as we remember, perfectly new. We are astonished that they have been

before the public since 1821, without having been noticed in any scientific journal of Britain, France, or Germany, which we have had an opportunity of consulting.

We shall commence with an account of his experiments, the merit of which ought to be considered quite apart from the use which the discoverer has made of them; and as the work which contains them is very scarce in this country, we shall relate the leading experiments nearly word for word. The original, it should be remarked, is in Latin.

The author, Ferdinand Frederick Reuss, in a preliminary essay on what he calls the *hydragogue*, or aquapellent property of electricity,\* has related several experiments to prove the existence of a new property in galvanism, the power, namely, of impelling water from the positive to the negative pole. He appears to have been led accidentally to study the phenomena in question, in consequence of observing the movements in the water of the particles of oxide of copper formed when the positive pole of his battery was made of that metal.

After describing the particulars of this motion, he proceeds to more satisfactory experiments. "This impulse," says he, "towards the negative pole is better seen, when the water is contained between two parallel glass plates three or four lines apart from one another, and when the wires are immersed at right angles to the water, being made of gold or platinum, and covered with glass tubes sealed at their extremities to the wires. It is convenient also to keep the wires steady yet moveable by thrusting them through two pieces of cork which rest on the edge of the vessel. If into the apparatus so prepared common water be poured, and the battery charged, the calcareous matter, which is separated by the decomposition of the salts of lime in the water, and causes turbidity, will not only show by its own movements a continual flow of the water from the positive pole in lines curved downwards, and then bending upwards to the negative pole, but will likewise delineate the course of the current by particles adhering to the surface of the glass plates." \* \* \*

"But the repulsive power of the positive and attracting power of the negative pole is seen much more satisfactorily, if the water in contact with each pole is separated by a stratum of porous matter, so that the particles which are impelled from one towards the other pole may pass through the interstices, while the cohesion of the interposed body may prevent other particles from passing in the opposite direction by their own gravity. Which conditions, in fact, are easily fulfilled

\* *Electricitatis Voltanæ Potestatem Hydragogam tanquam novam vim motricem, a se detectam, denuo proposuit, ejusque in naturæ operibus partes investigare tentavit S. O. Ferd. Reuss. (Lect. in Conventu d. vi. Oct. 1817.)*

\* *Commentationes Soc. Physico-Medicæ Mosquensis, II. ii. 327.*



by taking a tube of the form of the letter U, filling its curve with sand, and its straight, upright limbs with water. The two wires being now immersed in the water in the two limbs, and the galvanic circle consequently completed, the water will be observed slowly to sink in the positive, and rise in the negative end of the tube. With a voltaic pile composed of ninety-two silver rubles and as many plates of copper, a tube  $7\frac{1}{2}$  inches long, and wires made of platinum,—I found that in fifteen or twenty minutes, the water stood ten lines higher than before in the negative, and as much lower than before in the positive end of the tube. On interrupting the galvanic circle, the water soon returned to its original level, and on restoring the continuity of the circle, the transfer recommenced. Next day, fourteen hours after the experiment began, the positive limb was empty, the negative limb was full to overflowing. After observing that it continued thus for four days, I interrupted the galvanic circle again, and the water soon returned to its equilibrium of level."

"A similar but much more wonderful result was obtained when the interposed substance consisted of clay. I prepared a quadrangular prism of moist potter's clay, ten inches long, and two inches in breadth and thickness. At each end of this prism, and five inches apart from one another, I fixed, half an inch deep in the clay, two glass tubes three inches long, an inch in diameter, and open at both ends. I then poured into each tube an inch of water, and covered each of them (loosely, however, so as to allow a passage to the air,) with a cork, through which the two wires of the battery were passed down to the middle of the water. The pile consisted this time of seventy-four double plates, such as those used in the last experiment. The following phenomena took place. As soon as the electric circle through the wet clay was completed, which was indicated by the escape of air-bubbles from the water, the clay bottom of the positive tube began to swell and raise the sand, with a thin stratum of which I had covered it to keep the water from becoming muddy. In the course of half an hour the clay appeared softened to mud, a part of which pierced through the sand, and projected upwards like a little hill. By and by the pyramid discharged from its apex a muddy liquid, which ran down the sides like lava, and soon formed over the sand a layer of mud three lines in thickness. This beautiful appearance brought forcibly to my recollection the accounts given of the phenomena of mud volcanos. The explanation obviously was, that, when by the impulse of the positive pole the water was thrust towards the negative pole upon the clay at the bottom of the tube, the clay was softened, and the water in subsequently piercing the clay, threw the mud upwards and around it, just as a gimlet does while piercing wood. For half an hour no change was observed in the level of the water in either tube, and the sand and clay remained in the negative tube quite undisturbed. But when three hours had elapsed,

the level of the water in the negative tube had risen one line, in twelve hours it had risen two lines and a half; and in the meantime, the whole water of the positive tube had entered the clay, and the surface of the mud was about two lines lower than the *original situation* of the water. The following night the mud in the positive tube had sunk so far that the wire was not immersed in it; consequently the electric circle was interrupted. Nevertheless I found the level of the water in the negative tube a quarter of a line higher than before, and the clay in the positive tube was firm on its surface. The positive wire being then depressed so as to restore the continuity of the galvanic circle, the clay of that side gradually became firmer and more dry, while the water rose in the negative tube. At length in two days the latter had attained its highest level, namely,  $3\frac{1}{2}$  lines above its original surface, while the clay in the positive tube had become so dry as to crack. In two days more the cracks were larger, but the level of the water in the negative tube was not higher, probably because any farther increase it might have received was compensated for by evaporation. That no more than one-third of the water which disappeared from the positive appeared in the negative tube,—is to be explained partly by its having evaporated, partly by its having been diffused and retained in passing through the clay between the tubes."

In addition, therefore, to the properties already known to be possessed by the electric current, such as its power of effecting chemical combination and decomposition, of imparting magnetic properties to bodies, of exciting the muscles to contraction, it is also endowed with the power of impelling fluids in a direction from positively to negatively electrified bodies. This power, which Mr. Reuss denominates the *Vis Electricitatis Hydragoga*, he resorts to freely for explaining some terrestrial phenomena, such, for example, as the flow of springs from rocks too high for the water to reach by pressure from another source. But, in particular, he has applied it to explain the movement of the blood through the capillary vessels of the circulating system of animals. We believe it is unnecessary to spend any arguments here in showing that all the theories yet devised for that purpose have completely failed. The action of the heart is completely inadequate to maintain the capillary circulation, as is shown very satisfactorily by our author, Mr. Reuss, as well as by former physiologists; and with regard to the discoveries of Dr. Barry, notwithstanding what has been said in a former number of this Journal, the writer of the present notice will of course be permitted to express his particular opinion, (derived from the objections of Dr. Arnott,\* those of Mr. J. W. Turner,† and certain views and experiments of his own, which it would be foreign to the object before him to detail,)

\* Elements of Physics.

† Edin. Med. Chir. Transactions, iii.



that the force imputed by Dr. Barry to the venous suction generally, and to the suction power of the chest during inspiration particularly, has probably been overrated to a great degree by that ingenious experimentalist,—and that the force in question never can account for the passage of the blood through the capillaries.

Mr. Reuss's theory of course is, that the arterial system is in a state of positive, and the venous system in a state of negative electricity; and if he could establish this fact by observation and experiment, and not by hypothesis merely, on which its existence at present depends, there could be no difficulty in allowing that he had pointed out by far the most probable cause, and at all events *one* powerful cause of the capillary movements of the blood. As it stands, it appears to us peculiarly interesting, as adding to the facts and arguments formerly advanced by Wilson Philip, Dutrochet, Prevost, Dumas, and others, a new and important fact in support of the analogy, if not identity, of the nervous with the galvanic principle.

Mr. Reuss's paper, containing the experiments already detailed, is followed by another consisting of an elaborate exposition of his theory. The most important part of the second paper is an analytic view of the several powers which contribute, or have been supposed to contribute, to the movement of the blood in the circulating system generally,—an analysis undertaken by him with the view of showing that the whole of these powers combined cannot account for that part of the circulation which consists in the passage of blood through the capillaries,—and an analysis in which he is amply successful, and would have been so, though Dr. Barry had made his discoveries before Mr. Reuss wrote. The subsequent part of the second paper, containing the arguments with which Mr. Reuss endeavours to uphold his theory, is ingenious, but too hypothetical for the physiologists of Western Europe, and for British physiologists in particular.

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From the London Medical Gazette.

ESSAYS ON SYPHILIS. By JOHN BACOT, lately Surgeon to the First Regiment of Guards.

[Continued from page 314.]

In my last essay I adduced some proofs, in my opinion quite conclusive, that the venereal disease had been noticed in Europe at least ten years before the return of Columbus from the discovery of America; that it had then begun to excite serious uneasiness, on account both of its virulence and novelty, the former being sufficiently evinced by the death of several eminent persons in consequence; among whom may be reckoned Francis the 1st, Henry the 3d of France, and the Duke of Modena; the latter by the numerous and conflicting explanations of its origin, and the causes of its invasion at that particular period. A much

more difficult task, however, awaits me in endeavouring to point out the real source of the infection; it is, in fact, a Gordian knot, which not being able to untie, I must endeavour to cut; first observing, however, that I am not the only medical writer who has been glad to escape from this dilemma by the same short route. I will, therefore, mention to you a few of the opinions that have been held from time to time on this point. Sydenham supposes the venereal disease to be a native of Africa, and that it does not in reality differ essentially from the yaws; others, believing that it has been known in Hindostan from time immemorial under a name implying its origin from Persia, are of opinion that it is an Asiatic distemper; though there are not wanting authorities who deny this assumption, and affirm that it was conveyed to the East Indies from Europe by the Portuguese. Sprengel, who has bestowed much pains and displayed great learning in this research, is inclined to think that syphilis is a product formed from the combination of elephantiasis with the plague that ravaged Europe in the 15th century; whilst Swediaur, in direct contradiction to the tenor of his previous arguments, ends by suggesting, that perhaps syphilis may have travelled all round the globe; that it may have been nearly extinct in one country whilst raging in another, and that such as it was when it began to spread itself in Europe in the 15th century, it had infected humanity several thousand years before in Persia, in Thibet, and Hindostan; in short, the only point he seems to contend stoutly for is, that it was not brought from America to Europe. Now it is not unfair, I think, to presume, that when four or five different explanations of the same event are given, that nothing in reality is known about the matter—a remark that appears to be peculiarly applicable to this research: all we can truly assert, is the improbability, or rather the impossibility, of its having been derived from America, because that is contradicted by dates and historical facts, which cannot be perverted at pleasure; and the probability of its having been first noticed among the Spaniards, and carried by them into the more southern parts of Europe. I shall not pursue this fruitless search any farther, but proceed to acquaint you with some of the theories of the first writers, as to the causes of its invasion, and then describe the symptoms from the writings of eye-witnesses, and more especially from the accounts of those who experienced its attacks in their own persons: but here again we shall find ourselves involved in a labyrinth of contradictions and absurdities, especially when I come to relate the different modes in which the disease was communicable, according to the testimonies of former ages. In laying before you this evidence, the great difficulty I have to encounter is the selecting from among such a crowd of authors; but, of the earliest writers, (those who published between the years 1498 and 1508) I have quoted chiefly such as either from situation or acquirements are most particularly deserving of attention, or those



who detail only what they themselves have seen, or experienced in their own persons. The first remarkable circumstance that strikes us in this research is, that the most ancient writers, such as Peter Maynardus, Marcellus Cumanus, Grunpeck, and others, with one consent ascribe the disease to the malignant influence of the planets; and they go so far as to assert that its approach was predicted at least twenty years previous to the date of their labours; and here, if my object were only to amuse, I might quote such a mass of absurd jargon, such deep and unintelligible astrological learning, that one is at a loss which to admire most, the folly of those who wrote it, or the infatuation of those who read, and believed in its truth. The first author who sought for a rational explanation of the phenomena was Nicolas Leonicens, who published his treatise in June 1497: in this work he ascribes the invasion of the morbus gallicus to the inundations which had deluged Italy about that time, and though after him each new writer starts some fresh theory, we hear but little of the dreams of astrologers.

It has been asserted by many modern authors, who echo the stories told by their ancestors, that the mode in which the venereal disease was communicated then differed very materially from that which is now solely recognised: we are informed, that at first, it was so contagious as to be caught by means of the clothes, by touching an infected person, by a kiss, or by even breathing the same atmosphere; and yet if the original authorities are consulted, it will appear that this belief was not held in the first instance; for Marcellus Cumanus, who wrote in 1495, declares, that when he was encamped with the Venetian army at Novarro, (which John Howard has mistaken for Navarre) he saw many of the squires and foot soldiers of the lords of Milan, who suffered with pustules on the face and over the whole body, commonly beginning under the prepuce, or upon it, or on the penis itself, at first appearing like millet seeds, and with a trifling itching. This author mentions buboes also, which indeed, under these circumstances, could hardly fail of being sometimes present. A very few years later Alexander Benedictus of Verona, in speaking of the dreadful nature of this infection, observes, "*Mulieribus partes pudendas infestare miserabiliter cœpit morbus gallicus, unde illud prostitutarum virus totum orbem infecit, tanta earum partium fœditate, ut quacunque blandiori venere proci facili arcerentur: videres fœminas ore venerem pulchritudine superantes, quæ suo fœdissimo amplexu, infinitos libidine intemperantes sera penetentia afflixere.*" It will scarcely be necessary for me to suggest to you how many motives may have contributed to foster the belief which soon after this time began to be spread abroad, that impure commerce between the sexes was not the only mode of taking the disease; but even Gaspar Torella, who was physician to Cæsar Borgia, and dedicated his first work on the Pudendagra to that prince, although he says that it was most commonly caught by con-

tact, yet, as if afraid that he had admitted too much, adds, that it may possibly be acquired in other ways, such as from bad diet; but it is curious enough to perceive, that in the relation of his cases we find the modern legitimate way of taking the disease always recorded; for example, speaking of one of his patients, he says, "*Rem habuerat cum muliere habente pudendagram;*" of another, "*per viam contagionis fuit infectus;*" whilst a third acquires the disease by sleeping in the same bed with his afflicted brother. Thus, also, Montagna the younger, writing to the Cardinal Viceroy of Hungary, who was then labouring under the complaint, very cunningly declares it to proceed from an epidemic disposition of the atmosphere; but he adds, with great truth, that it always begins in the parts of generation. Alexander Benedictus also, who was present at the action at Foro Novo, where the combined forces of the Venetians, and other Italian princes, were defeated by Charles the 8th, on his return to France from Italy, in the month of July 1495, distinctly says, this new disease arose in the parts of generation: his words are these: "On this account (the nervous structure of the penis) from the venereal congress, a new, or at least a disorder hitherto unknown to the physicians, called the French disease, was brought to us from the west, by the malignant influence of the planets, and broke out at the time these affairs were going on, &c." I quote this passage because Swediaur has affirmed that none of the early writers had the least notion that the parts of generation were concerned in the first invasion of the disease; and he mentions this very writer, Benedictus, as an authority to that effect. In the first years of the 16th century, Cataneus gives us, among the proximate causes of the disease, either coition, or sleeping a long time with, or drinking after a diseased person: and later in the same century, we find, that among the articles of accusation against Cardinal Wolsey, it was urged that he, being infected with the venereal disease, had whispered in the king's ear. In the succeeding century, however, the conviction of its being communicable by the commerce of the sexes alone, becomes nearly as well established as in the present day; so that we may, without much hesitation, attribute the belief of its epidemic qualities to have arisen either from the credulity of the times, or more probably, as an easy method of avoiding the scandal and disgrace that would necessarily have attached itself to the numerous dignified sufferers, many of whom were ecclesiastics of the highest rank.

I know that the possibility of the venereal disease having been communicable in various other modes has been a favourite opinion of some recent authors; and that they have urged, in support of this doctrine, the parallel instances of the yaws, the sibbins, and of a new disease which has lately appeared in Canada, an account of which was published by Dr. Bowman: but it seems to me that none of these instances are at all in point; for in the first place the yaws has been described



from the first as a contagious disease, in the common acceptation of the word; and it never has been believed, nor is it now thought, that connexion between the sexes is necessary for its production; it is only possible to be communicated once during the person's life, in all which particulars the sibbins and the Canadian disease agree with it; so that, in order to render this article of any force, it should be shown, either that the yaws and sibbins differ now from the descriptions formerly given of them, or that the venereal disease is still to be caught by conversation, touching the person or clothes, or breathing the infected atmosphere, as was formerly said to have been the case. I should not have thought it necessary to have bestowed so many words on a point which appears to me to be perfectly untenable, if it were not that in reading some modern treatises, the above arguments are insisted upon; and I would not have it supposed that I have overlooked them from ignorance, or because I conceived them incapable of being answered.

I now proceed to detail some of the leading symptoms of syphilis, as recorded by the most distinguished and eminent writers within the first forty years after its invasion, and I shall select them from the writings of Marcellus Cumanus, of Gaspar Torella, and John de Vigo: these authors describe the appearance of small pustules on the genitals, attended with some degree of itching, followed in a few days by violent pains in the arms, legs, and feet, attended with large pustules, or ulcers, and which were cured with difficulty, sometimes lasting a twelvemonth or more: the bones became affected with swellings, the hair fell off, the eyes were sometimes destroyed, as well as the nose; the mouth and throat were ulcerated, the uvula corroded; and, finally, the disease killed, rather by inducing some other complaint than by the mere force of the symptoms themselves; and when it had once become confirmed, a palliative cure only could be obtained. Thus it will be perceived, that excepting in the rapidity of the march of the disease, the principal features were the same in the early part of the 16th century as at this time; they are mitigated in severity, but in kind they remain unchanged. It is to be observed, that buboes are mentioned in the early part of this history, although it has been said that they were first noticed by Francastorius, but that is scarcely worthy of a refutation; since as long as ulcers on the genitals have been known, so long must inflammation and suppuration of the inguinal glands have sometimes followed as a consequence. The same assertion respecting a gonorrhœa has been also made by Howard and others, but it is a mere inaccuracy, for this symptom is distinctly mentioned by Alexander Benedictus, who wrote about the year 1497, as well as by Jacob a Bethincourt, in 1597; and therefore there can be no pretence for saying that Fallopius was the first who included this among the number of venereal symptoms. I have already observed, in my former essay, that the use of

mercury in the cure of many cutaneous affections was known to the Arabians, and brought into notice in Europe by Theodoric, in the 12th century; and as applicable to the cure of syphilis, it is to be found among the modes of cure recommended by Grunpeck, in 1496, in conjunction with bleeding, purging, &c.: his receipt for mercurial ointment contains, indeed, a great many extraneous ingredients, with about one-sixteenth part of quicksilver; yet it is to be observed that the employment of such remedies was very generally condemned at that early period, and they were consequently almost exclusively employed by empirics or uneducated men; so that we find many medical writers warning the profession against their use, and trusting entirely to evacuations, baths, and various kinds of liniments: among these, Gaspar Torella is distinguished by the violence with which he opposes the mercurial inunction; however, he gives us several prescriptions of this kind, but adds, "*supradicta unguenta, tanquam a peste fugienda sunt.*"

There can be no doubt that the want of skill of the practitioners of those days, their ignorance of the effects of mercury, of its accumulative powers, and of its occasionally capricious action, must have occasioned many untoward events; indeed, the mode of employing the remedy then in vogue, together with the belief that the venereal poison was expelled by the mouth, will sufficiently account for much of the mischief that ensued. We are told, for instance, that the patients are to be anointed between two fires, twice every day, from the upper arms down to the hams, and from the hips to the feet, until the mouth was made sore; then they were to be kept warm, whilst the flux from the mouth was continued. Hence it arose, that finding all common methods of cure unsuccessful, and taught by experience the baneful consequences of a rash employment of mercury, any new remedy that presented itself was seized upon eagerly. Such a remedy was announced to have been discovered in the West Indies, where it was called guaicum or huaicum wood; it was brought to Europe first in the year 1508, by Gonzalvo Ferrand, and got into very general notice a few years later, in consequence of its curing a great number of persons, and especially Ulrich Von Hutton, who published an account of his own case, which very much tended to extend the reputation of this remedy: it will not, however, a little derogate from the presumed virtues of this wood, when we find, that even this case was only palliated by its use, and that so far from being a pure case of syphilis, it is evidently one in which mercury had been injudiciously administered, and where the patient was suffering from a mixed distemper. This will be readily conceived when we learn that Hutton had actually undergone the mercurial treatment eleven times with only partial relief, and that he had been a sufferer from a disease, supposed to be venereal, from the age of nine years. No great length of time elapsed before it was discovered that



many of those believed to have been cured by the decoction of guaicum, relapsed; this was of course attributed either to the wood itself being adulterated, or to some essential part of the process being neglected. Hence it became the fashion for those whose circumstances would admit of the expense of the voyage, to transport themselves to the West Indies, in order to undergo the Indian method of treatment. Mr. Pearson has given a very curious extract from M. Louis's work, in which the method of cure practised in America is detailed: from this narrative we learn that two young Frenchmen of rank, who had in vain endeavoured to obtain a cure in Europe, were recommended to embark for St. Domingo. Upon their arrival the Viceroy's physicians advised them to remove to Puerto Rico, where the cure of the disease was usually undertaken by females. They were treated in the hut of a native in the following manner. She bruised, and cut with her teeth the small branches of a young guaicum tree, and boiled them in an open vessel; they were made to drink a chopin of this decoction every morning, at two or three draughts; then they were ordered to walk out, to exercise themselves in fencing, or else they went to work in a gold mine, not far from the village, for the space of two hours; then, returning home covered with sweat, they changed their shirts, and dined; drinking only water. About three o'clock in the afternoon they drank the same quantity of guaicum decoction as in the morning, and performed the same exercise: thus, without any other remedy, they were perfectly cured in six weeks, without suffering any other inconvenience than a swelling and inflammation of the gums, of which they presently got well, after having been bled by pricking them in several places with a very sharp-pointed fish-bone. The nodes they had on their bones disappeared; all their nocturnal pains gave way in fifteen days; their appetites returned; and, in short, they went back to France quite well, and remained so ever after. Notwithstanding, however, these and many similar histories, there were not wanting men of great reputation, who contended that the guaicum could not be relied upon alone, and who still advocated the employment of mercury in all obstinate cases; and that this wood did not long maintain its pristine character, may be concluded from the introduction of other vegetable remedies, each of which was ushered into notice with the most unlimited and unqualified praises: the most extolled of these were the China root, and the sarsaparilla: the first of these roots, however, soon lost much of its reputation, for it was prescribed to the Emperor Charles 5th, but without effect; and in truth, as a single remedy, was soon superseded by the sarsaparilla, until at length it became the fashion to unite both these recently imported articles with the guaicum; thus giving origin to the decoction of the woods, so famous in latter times; and which, among the changes of fortune to which medicines are subject, as well as every thing else, has again obtained a

consideration nearly commensurate with that which it enjoyed even on its first introduction.

During the remaining portion of the 16th century, a great difference of opinion existed among medical men as to the respective merits of the mercurial and vegetable modes of treatment: names of the greatest reputation and authority are opposed to each other on this point: thus Fallopius condemns, in strong terms, the use of the mercurial ointments, and mentions, among the consequences, excessive salivation, mania, tophi, vertigo, &c.; observing, that many preferred perishing rather than undergoing the mercurial discipline, under which relapses were frequent, and caries of the bones, in particular, one of the most usual consequences. This is very strong language, and it is the more to be remarked, because Fallopius was a man of no common ability, attainments, and character; he was as remarkable for the estimable qualities of candour and disinterestedness, as for the splendour of his talents; and, without question, he spoke his genuine and unbiassed sentiments when he extolled the cure by sarsaparilla, as the *via regia*, and condemned the mercurial treatment, as "*omnium curationum acerbissima*;" and so it undoubtedly was, according to the mode of administering it practised in that day. Ambrose Paré, on the contrary, who wrote not much later in the same century, takes quite a different view of the matter; he mentions four methods of curing the great pox, as usually recognised among practitioners: the first, by the decoction of guaicum, being not severe; but he observes that it is not able to do more than palliate, it cannot extinguish the virus of the disease. Mercury, which was the next method, was employed in four different ways—by inunction, by fumigation, by plasters, and by pills: of these different modes, that by plaster was soon abandoned, whilst the internal exhibition of this mineral, but little employed until the close of the 16th century, then began to be pretty generally recommended, in conjunction with the external use of mercurial ointments, or liniments; and as emperors and kings will lead the fashion even in the introduction of new remedies, so it happened that the pills of Barbarossa obtained at this time great reputation, in consequence of their having been used by Francis the First, king of France.

The seventeenth century has to boast a list of writers on syphilis not much less numerous than the age which preceded it, but they will not detain us so long. The first thing that I shall observe in this portion of my history, is the decided improvement in the composition of the mercurial ointments, which, in the first instance, were composed of a farrago of useless ingredients: we now find, that not only these were expelled, but the strength of the preparation was materially augmented. In this century, some authors began to appreciate the virtues of sarsaparilla, chiefly in removing the consequences of mercurial treatment—such as debility, pains in the joints, &c.;



but there is very little novelty in this, and I shall therefore content myself with giving you the general practice of that time, as recorded by two of our own countrymen—Sydenham and Wiseman. According to the former of these authors, the practice of inunction, as employed in his day, was, indeed, a most formidable process. The ointment he used was composed of hog's-lard and mercury, in the proportion of two ounces of the former to one of the latter; and of this, one-third part was directed to be rubbed by the patient into his arms, thighs, and legs, for three successive nights, avoiding both the axillæ and penis. After the third unction, the gums generally swell; but if not, eight grains of turpeth mineral are ordered to be given; the salivation is directed to be brought to a flow of about two quarts every twenty-four hours, and if it diminishes before the symptoms vanish, then a scruple of calomel is to be prescribed occasionally; and it appears that the patient during the whole of the time, was kept in the same sheets and clothes, unless the salivation proceeded to such a height as to endanger his life. Sydenham remarks, that mercury alone cannot succeed in curing an exostosis; and, from what he says respecting regimen, it is evident that it was the usual custom to keep the patient in bed during the whole process, and to enforce the most rigid abstinence. It seems to have frequently been the fashion, at this period, to go to France, for the purpose of undergoing a cure; and this the doctor explains as attributable to the belief in the superiority of the climate.

Wiseman gives himself no trouble to inquire into the origin of the disease, but his Treatise is, nevertheless, well deserving of attention, on several accounts. He remarks that the pox is caught either mediately or immediately: by the former he means, where an infected child sucks a sound nurse, or *vice versâ*. He ridicules the common tales, as to the propagation of the disease by sleeping in the same bed, wearing the clothes, or drinking out of the same vessel with one so affected. Wiseman was, in fact, a practical man, with strong common sense, and great knowledge of the world; and, therefore, paid little attention to theories that flattered the self-love, or tended to save the reputation, of his superiors. He is the first author who observes, from his own experience, that it often happens some men will be infected, whilst others shall escape with impunity, from the embraces of the same woman: of this he declares that he saw repeated instances whilst serving in the king of Spain's navy. "I have known," he says, "twenty men lie with one and the same woman, the same day, and only one of them affected, though the rest equally deserved it." He speaks of gonorrhœa as the first symptom, though not always so; and his enumeration of the symptoms does not differ from the generality of the writers of his age. Another peculiarity attending this disease is mentioned by Wiseman—the curious fact that many people are in the habit of fancying themselves infected, and the great difficul-

ty that is often found in persuading them to the contrary. Of the cure of the venereal disease Wiseman entertains but little doubt, unless the patient has previously undergone mercurial inunction ineffectually; and if he has been salivated, appeared well for some time, and then relapsed, he has still a more unfavourable opinion of the case. He is particular in directing venesection, before the commencement of the mercurial treatment; and seems to believe that, by this means, assisted by purging, the remedy is more efficacious and better borne by the patient. After enumerating several internal forms of exhibiting mercury, the following description of his mode of procuring a salivation, which I have considerably abridged, presents itself to our notice:—The patient is to have his bed near a fire; the windows, if the weather be cold, must be covered with blankets; or a more proper place is a stove, if the patient can bear it. The ointment is to be rubbed in either by the surgeon or the invalid, beginning from the feet, and then proceeding up the legs, and thighs, and hips, to the spine of the back, even as high as the neck, including the hands, arms, and shoulders; the belly is to be avoided. As the parts are rubbed, they are to be covered up; the head is to be wrapped up with a napkin, tacked to the cap round about the ears, and fastened before, to keep the chaps warm. Afterwards, the patient is to be put into a warm bed, and have a posset drink; and this ceremony may be repeated twice a-day, unless salivation is brought on too quickly. Many directions are given for cleaning the mouth, and a rolled clout is to be placed between the teeth, to prevent the chaps from closing. This precious process lasts from twenty to thirty days; after which, sweating is to be observed, of which three methods are detailed; and a whole chapter is devoted to the consideration of the specifics, together with formulæ for their preparation—of these, sarsaparilla, China root, guaicum, and saponaria, are the chief.

The above specimens will, I conceive, be sufficient to give a general idea of the mode of treatment employed towards the close of the 17th century, and, therefore, it is easy to imagine the number of victims such practice must have produced, and we may well comprehend the horror with which the pox was regarded in those days, and why it was made use of as one of the bitterest imprecations, since it would appear to be almost impossible to escape either mutilation or death from the disease or the remedy. One conclusion may however be drawn from this account; it is quite evident that neither the sarsaparilla nor the guaicum possessed the reputation formerly attached to them; that they had fallen to the rank of mere secondary agents, employed more for the purpose of palliating particular symptoms, or of restoring the tone and vigour of the constitution after the completion of the mercurial course, than as really endowed with any specific power over the disease itself; nevertheless, there were not wanting practitioners in those days, who entertained opi-



nions relative to syphilis more in conformity with the views which have lately caused so much discussion in this country. Of these, David Abercrombie is the most remarkable. he published a short dissertation on syphilis in 1684, in which he condemns mercury entirely, and declares that the vegetable remedies are alone sufficient to effect the cure of nearly every form of the disease, though he admitted the necessity of *occasionally* employing mercurial pills; but later in life he seems to have changed, or at least modified, his opinions very much, and contents himself with recommending the substitution of the *mercurius dulcis* for the mercurial inunction, and restricts his censures of the mineral remedy to the condemnation of salivation in patients of certain habits and constitutions.

This milder method of administering mercury began in the early part of the 18th century to obtain many advocates and followers; a warm discussion took place between these practitioners and the favourers of the older doctrines. In 1732, we find a very hot controversy carried on between Daniel Turner and Chicoyneau, of Montpellier, on this point of practice; and it must be confessed that if our countryman has not the best of the argument, he exceeds him by far in violence of invective. Among the eminent men who contributed to moderate the severity with which it had been customary to administer mercury, the name of Boerhaave must not be forgotten; he stood forth as a warm champion of the decoctions of sarsaparilla and guaicum, and was greatly influential in bringing the profession to a more just and temperate appreciation of the powers of mercury. It is well known with what zeal this subject was taken up by his commentator, Van Swieten, who having the control of the medical department of the army, at Vienna, sent a certain number of soldiers to the hospital of St. Mark, in order to ascertain the merits of the milder plan of treatment by the corrosive sublimate, and all of them so sent, with the exception of six, who were affected with incurable caries of the bones prior to their admission into the hospital, were discharged cured. To this successful experiment must be ascribed the prevalence of the same practice in most parts of Germany to this day. But opposed to the employment of mercury, we must not forget to mention the names of De Blegny, and more especially of the great Morgagni: the first of these writers was decidedly adverse to the use of mercury, and the latter makes use of the following remarkable expressions: "When I went to Bologna, as a young man, both the external and internal use of mercury was nearly deserted, and I never heard of its being used during the eight years that I remained there, either one way or other, in the treatment of the venereal disease."

But notwithstanding these and other authorities, we have repeated proofs in the first half of this century that the state of practice in this disease was far from settled; that cases of the most severe suffering, rebellious to the usual

methods of cure, were then so common, that new remedies were eagerly sought for and brought into notice, enjoying an ephemeral reputation only to give place to what was already established: among these the volatile alkali was loudly extolled by M. Peyrehle, but it is not necessary for me to do more than mention the fact: this remedy soon sunk into oblivion: the same may be said of the meze-reon root, the powers of which were indeed supposed to be restricted to the cure of nodes and osteopic pains, and which still holds a place as an ingredient in the compound decoction of sarsaparilla. This medicine again became the object of investigation and inquiry by Sir William Fordyce, who has given an account of his experiments in the *Medical Observations and Inquiries*; and the conclusions to which he arrives are so strong, and so much in unison with what we now hear, that I am tempted to quote them. He says, that this preparation of the sarsaparilla will commonly remove, in a very short space of time, venereal headaches and nocturnal pains, and, if persisted in, will always effect a cure. In emaciated or consumptive habits (according to the same respectable authority,) from a venereal cause, it is the greatest restorer of flesh, strength and colour: when the throat, nose, palate, or the spongy bones in general, are affected with a slough or caries, it will commonly complete the cure, if persevered in long enough, provided a mercurial course (he means by inunction) has preceded the use of the sarsaparilla; and farther, he adds, it will, perhaps, always cure whatever resists the power of mercury; and it is therefore probable that we may find, in mercury and sarsaparilla combined, a certain cure for every case that can be properly called venereal.

We see here how very closely Sir William Fordyce advances to the very line of practice advocated and employed by many surgeons of the present day; but yet at that period his experiments made but little impression upon medical men in general, for we are told by Mr. Bromfield, almost at this very time, that he never saw a single instance in which the sarsaparilla cured the venereal disease without the assistance of mercury, either given with it, or taken previously; and Mr. Pearson remarks, that his own observations coincide entirely with those of his predecessor. Still, however, so many obstinate and difficult cases from time to time occurred, even in the practice of those who employed mercury in the most approved manner, that professional men did not abandon the search after some remedy that might possess the same power over the disease, without bringing those evils in its train which mercury gave rise to. Among these, for they were very numerous, opium, cicuta, and the nitrous acid, may be especially named, since their pretensions were upheld by authors of great reputation, and extensive trials were made of their virtues, with at least partial, or temporary success. Thus, with regard to opium, it was tried very extensively in America, and had a warm advocate in Dr. Michaelis; but excepting



that it was occasionally found to overcome nocturnal pains, and still more frequently to allay the irritation caused by a previously profuse exhibition of mercury, it seems to have had no real power over the disease. The same remarks apply to the effects of cicuta; but the nitrous acid has a stronger claim upon our attention. Its employment was much more general; the number of cures performed by it, or at least during its use, were so great, and its admirers were so enthusiastic in its praise, that it continued for many years to make a great impression on the public mind, and bade fair to supersede entirely the mercurial treatment: that it did not do so, we now can well understand, because we know that primary symptoms will get well either with or without any specific mode of treatment; but as sore throats and eruptions were too apt to succeed to these local cures, and as it was not imagined that simple means would also very frequently overcome these, we need not be surprised that the nitrous acid followed the fate of so many other remedies, and was at last neglected as a cure for syphilis, though it still maintains its reputation as a therapeutical agent in other diseases. One of the reasons that contributed to support the reputation of this remedy was the obvious effect it had in producing inflammation and swelling of the gums, and as mercury possessed a similar power, many theorists imagined that the medicinal effects of both remedies were the same, and hence arose the hypothesis that mercury owed its curvative powers to the oxygen contained in the majority of its preparations.

It will be perceived from what has been said, that all the efforts made by surgeons at various periods to supersede the employment of mercury, were so far from succeeding, that at the close of the 18th century, almost in our own days, its supremacy was thoroughly established, and in the most triumphant manner: it was generally believed that those unfortunate persons who failed to obtain a cure, or who had suffered the loss of the spongy bones of the palate and nose, or became affected with exostosis or caries of the larger bones, might ascribe their misfortunes to the use of too little, rather than to a superabundance of the remedy; and although other medicines were occasionally combined with the mercury, and sarsaparilla was frequently prescribed as a restorative to the constitution towards the termination of the cure, yet mercury was the *sine qua non*—it was given indiscriminately for every breach of surface on the genitals—scarcely could any cutaneous affection escape the suspicion of a syphilitic origin—nocturnal pains were generally condemned to inunction without mercy or discrimination—and the state of the venereal wards of our public hospitals will not easily be forgotten by those who are old enough to have witnessed the disgusting details they afforded—nay, I am sorry to observe, that this evil has scarcely been abolished entirely in our own days.

I have now brought down the history of syphilis to within thirty or forty years of the

present time, and have omitted, I trust, no material facts connected with it: I might have added an account of the various forms of mercurial medicines invented and lauded by different practitioners, but the properties, and relative merits of these different preparations, will more properly belong to that portion of my work devoted to the treatment of the symptoms, and I shall therefore now beg leave to offer to your consideration a remark or two which appear to arise out of the statements I have made, since history would be little better than a mere record of dates, unless we endeavoured to draw from it some useful inferences. In the first place, then, we have seen that at a certain period of the 15th century, a new and terrible disease is announced, rebellious to all the therapeutical means used in those days, attended by a train of symptoms loathsome in the highest degree, and spreading so universal an alarm, that the governments of several countries thought it necessary to provide an asylum for those affected with it, and to separate them from the rest of the population: this has been offered as a proof of the superior malignancy of the disease when it first made its appearance, as well as of its possessing a contagious property, independent of the common means of communicating it by the commerce of the sexes: but surely this inference is drawn rather too hastily: that in the course of time the disease has become milder, there can be but little doubt; but the absurd regulations of a barbarous age, when the nature of the disease was so totally misunderstood, and the laws of epidemics were no less so, certainly afford but little solid ground for believing that this was a contagious disease, in the usual acceptation of that term; and in confirmation of this opinion, I may remark, that the seclusion of the venereal patient was abandoned in so short a space of time, as to demonstrate pretty clearly, that the opinions of medical men had changed, not that the disease had thus suddenly altered its character.

2dly. We have seen that mercury was very soon discovered to possess a peculiar power in arresting the progress of the disease, but, as might be expected, this novel remedy was employed without measure or moderation; and most probably, in many cases of an ambiguous nature, not really syphilitic; so that the fatal results of the treatment on one side, and the disease on the other, led to the temporary, but almost total abandonment of mercury as a remedy: here we cannot but be impressed with the very strong evidence given us by men of the first character, as to the curative powers, not of one vegetable remedy only, but of several in succession, and which at length almost entirely superseded the mercurial treatment. We may indeed readily conceive, that both the guaicum and sarsaparilla derived much of their reputation from their employment in those cases where the constitution had been broken down by, or saturated with mercury; yet still we cannot doubt that the venereal disease must frequently have yielded to the use of those remedies, or how



can we account for such men as Fracastorius, Fallopius, Fernelius, Palmarius, and a host of other authorities, giving it the preference in their practice? Still, however, mercury, though lowered in fortune, was not entirely abandoned; and some years later we find it again enjoying its pristine reputation, until it received another rude shock from Boerhaave, after which it recovered its character, until it became at length thoroughly established in public opinion, and acknowledged by a consent, almost universal, to be the sole safe reliance of the practitioner in the cure of the disease. One thing, then, appears certain, that the natural history of syphilis was still utterly unknown, or rather, that it had never been inquired into at all. Numerous and learned indeed had been the disquisitions into the nature of the poison, and the seat of the infection; all the sects of medicine had in their turn applied the philosophical theories of the day to the explanation of the phenomena; but the safe, the only rational plan of inquiry, that by experiment and induction, had never been resorted to at all; it was reserved to a later period, and originated in our own country, the birth-place of that sound philosophy to which the present advanced state of all the arts and sciences is chiefly attributable. But before I enter upon this branch of my subject, there is one writer who more especially demands some notice; I mean Mr. John Hunter, who published a treatise on the venereal disease in the year 1786: this is a work on many accounts highly deserving of notice, and will, in its proper place, receive a due portion of our attention. At present I have to remark, that the labours of Mr. Hunter obviously led the way to much that has been more fully developed by others; his researches into the nature of the venereal poison, his original notice of certain affections, resembling syphilis, as well as numerous other novel and ingenious ideas scattered throughout his work, evince the original and comprehensive mind of that great man. It has often been lamented that Mr. Hunter undertook this inquiry without much previous knowledge of what had been written by his predecessors; but whilst I admit the fact, I beg leave to deny the conclusion drawn from it: I conceive, on the contrary, that by entering on his task totally unprejudiced, and drawing solely from the resources of his own mind, he has dispelled more errors, and did more towards elucidating this curious and long contested subject, than any man who went before him. If he did not pursue the inquiry to its fullest extent, he at least opened the path for future research; and the same stamp of originality is to be found in this work as distinguish the rest of his labours: that it has many faults, some of them of a serious nature, I certainly must admit: want of perspicuity has been ascribed to it by Mr. Hunter's most enthusiastic admirers, and it will be my duty to point out to you, in the proper place, many contradictions, and even some practical directions, which are now justly exploded. There is, however, yet

another writer whose labours demand a little of our notice, though, by a fatality which is often observed, and not to be accounted for, his work made but little impression on the public mind, and seems now to be almost forgotten: I allude to Dr. Clutterbuck's pamphlet, published in 1799, and entitled, *Remarks upon some of Mr. J. Hunter's opinions on the Venereal Disease*. The most remarkable passages of this work relate to the belief of the possibility of curing many forms of the venereal disease, not only without mercury, but without medicine of any kind; or in plain language, admitting that they might undergo a spontaneous cure. Thus you perceive how very nearly this gentleman advanced to the very conclusions which have since been the result of direct experiment; and that, in fact, as a late excellent writer has remarked, he may justly claim the merit of having distinctly pointed out to us that the mere circumstance of a disease giving way, and being cured without mercury, is no proof that the case is not venereal.

[*To be continued.*]

From the London Medical Gazette.

**SOME ACCOUNT OF A CASE IN WHICH THE UTERUS, IN A STATE OF MALIGNANT ULCERATION, WAS SUCCESSFULLY REMOVED.** By JAMES BLUNDELL, M.D., Lecturer on Physiology and Midwifery in the School of Guy's Hospital.

Mrs. A. B. æt. 50, of gray eyes, tranquil disposition, broad in her make, and disposed to obesity, was seized with offensive discharge from the vagina, soon followed by eruptions of blood in large quantity, so that, according to her own report, frequent faintings were produced, and the blood occasionally sank through a bed about twice as thick as a sofa-cushion, collecting on the floor; and day after day, for months together, with little intermission, one or two pints of blood were discharged.

Although Mrs. A. B. in her general conversation, is by no means prone to hyperbole, it seems evident that she must have greatly overrated the quantity of these daily floodings. Certain, however, it is, from her repeated and considerate declarations, that very large quantities of blood were lost during a period of many months; and though, with the exception of some small œdema of the legs, there were no signs of general dropsy, the paleness, coldness, and weakness, and the frequent attacks of faintness, of complete delirium, showed pretty clearly that much vascular inanition had been produced. In other particulars, the patient's condition was not altogether discouraging; for the bowels were regular, and the appetite was occasionally good; and the appearance, though cachectic, and perfectly similar to that of other women perishing under malignant ulceration of the uterus, was not such



as to indicate a constitution wholly unfit for surgical operation.

The woman having been under the care of three or four different practitioners before I saw her, I deemed it proper to examine immediately with great attention; when I found that the womb was moveable, and about as large as a goose's egg—that its mouth was broad, open, and of cartilaginous hardness—that it manifested the usual marks of malignant disorganization, in which also about one-fourth of the contiguous vagina was involved; and, further, that on the surface of the diseased mass was formed an ulcer, about as broad as a shilling. The adjacent structures appeared to be healthy enough—the bladder and rectum were sound, the inguinal glands were not enlarged, whence it was presumed that the lumbrics were perhaps healthy; the ovaries could not be felt to exceed their ordinary bulk, and there evidently was no tangible enlargement of the liver, spleen, kidneys, or omentum, all of which were examined with the nicest care. The breathing was easy; the pulse, various in its frequency, ranged between 115 and 120 in the minute; and the patient, though certainly very much debilitated, had sufficient remains of strength to walk to my house (the distance of a furlong,) though not without considerable difficulty. To be short—it seemed clear at this time, that the case was ulcerated carcinoma of the uterus, as it is called, and that extirpation was the only remaining remedy.

The bowels having been cleared, and the patient being resolved to submit to the operation, on the 19th of February, 1828, I determined to remove the diseased parts without further delay. For this purpose, having placed the woman in the obstetric position usual in this country (on the left side I mean,) close upon the edge of the bed, with the loins posteriorly, the shoulders advanced, the knees and bosom mutually approximated, and the abdomen directed a little downwards towards the bed, I began the operation.

*First Stage of the Operation.*—I commenced by passing the index and second finger of the left hand to the line of union between the indurated and healthy portions of the vagina; the finger being converted into a cutting instrument (varying with the exigencies of the operation,) by means of a moveable knife, which requires a word or two of description. The blade of this knife, not unlike that of a dissecting scalpel, was mounted upon a long slender shank, which, including its large handle, was about eleven inches in length; and with this stem the blade was united, so that its flat, or plane, formed with the stem an angle of 15 or 20 degrees. The first and second fingers of the left hand then being in the back of the vagina, contiguous to the diseased mass (as before observed,) by taking the stem-knife in my right hand, I could at pleasure lay the flat of the blade upon the front of these fingers, and urge the point of the instrument a little beyond the tip. The apex of the fore-finger being in this manner converted into a cutting point, by little

and little I gradually worked my way through the back of the vagina, toward the front of the rectum, so as to enter the recto-vaginal portion of the peritoneal cavity, frequently withdrawing the stem-scalpel, so as to place the point within the tip of the finger, and then making examination with great nicety, in order to ascertain whether the vagina was completely perforated, minute care being necessary in this part of the operation to avoid wounding the front of the intestine.

*Second Stage of the Operation.*—A small aperture having been formed in this manner, in the back of the vagina, through this opening the first joint of the fore-finger was passed, so as to enlarge it a little by dilatation and slight laceration (safer than incision.) This done, and a cutting edge being communicated to the finger, by placing the plane of the blade in such a manner that its incisory edge lay slightly advanced beyond the side of the finger now lying in the aperture, after drawing the point of the instrument within the tip of the finger, which operated as a guard, I proceeded to make an incision through the vagina transversely, that is, in a direction from hip to hip; for this purpose carrying the finger with its cutting edge, from the opening in the vagina already made, to the root of the broad ligament on the left side, so as to make one large aperture. I then took a second stem-scalpel, formed on the same model as the preceding, with this difference, that the incisory edge lay on the other side of the blade; and laying this instrument on the fore-finger as before—in such a manner, however, that the cutting edge lay forth on the other side of the finger (to the right of the pelvis, I mean.)—I carried the finger thus armed from the middle of the vagina, where the former incision commenced, to the root of the broad ligament on the right side; so that, at the end of this, which was the second step of the operation, the diseased and healthy portions of the vagina behind became completely detached from each other, by a transverse incision, which stretched across the vagina, between the roots of the broad ligaments immediately below the diseased parts. At this time the intestines could be felt hanging about the tips of the fingers; but the blade of the scalpel lying on the finger, in which it was as it were imbedded, the risk of a wound, whether by point or edge, was completely prevented.

*Third Stage of the Operation.*—The back of the vagina, then, having been divided in this manner, I urged the whole of the left hand, not of large size, into the vaginal cavity—and the more easily because the woman had borne children; afterwards passing the first and second fingers through the transverse opening along the back of the uterus—this viscus lying, as usual, near the brim of the pelvis, with its mouth backward, its fundus forward, and a little elevated just above the symphysis pubis. This manœuvre premised, under full protection of these fingers, now lying between the womb and the intestine, taking a double hook, mounted on a stem eleven inches long, I pass-



ed it into the abdominal cavity, through the transverse aperture, along the surface of the fingers already mentioned; and laying it in front of them, near their tips, I converted these fingers into a sort of sentient tenaculum, which, with little pain to the patient, I pushed into the back of the womb, near the fundus, and then drawing the womb downward and backward, towards the point of the os coccygis, as I carried the fingers upward and forward, I succeeded ultimately in placing the tips over the fundus in the manner of a blunt hook; after which, by a movement of retroversion, the womb was very speedily brought downwards and backwards, into the palm of the left hand, then lodging in the vagina, where, at this part of the operation, the diseased mass might be seen distinctly enough, lying just within the genital fissure.

*Fourth Stage of the Operation.*—The process of removal being brought to this point, the diseased structure still in the palm of my hand, remained in connexion with the sides of the pelvis, by means of the fallopian tubes and broad ligaments, and with the bladder by means of the peritoneum, the front of the vagina, and interposed cellular web,—parts which were easily divided, so as to liberate the mass to be removed. The broad ligaments were cut through, close upon the sides of the uterus, and in dividing the vagina great care was taken to keep clear of the neck of the bladder and ureters. This division of these attachments, and the removal of the diseased mass, constituted the fourth step of the operation. Some bits of indurated vagina, altogether not larger than the common bean, were left in the pelvis, to be removed at some future period, should symptoms require. This fact is worth recording.

To this circumstantial account of the operation may be added a few remarks. The intestines did not protrude. About an ounce of blood was lost when the back of the vagina was divided, three or four more ounces following when the vagina was cut in front. Ligatures, tenacula, and forceps, were in readiness to secure the vessels, but these were not required.

The intestines were felt at one time only, namely, when two fingers were lying out through the opening in the vagina behind. Of course some pain was felt when the first incisions were making, and when, as in ordinary obstetric operations, the hand was urged into the vagina; but the principal distress was occasioned by drawing down the uterus, when the retroversion was accomplished, and the ligaments were put upon the stretch.

The pains and complaints scarcely exceeded those observed in instrumental deliveries. The patient lay in the ordinary obstetric position, and required no restraint. The insertion of the hook into the back of the uterus did not occasion much suffering. The operation, from first to last, occupied about an hour, but much of this time was spent in reposing and considering what might best be done. With better instruments, and greater activity,

the whole operation might most probably be completed in five minutes. In obstetrics, however, celerity is considered to be in itself a secondary merit, and the operation was conducted on obstetric principles. The general range of the pulse was between 120 and 130, a frequency common in delivery by instruments.

When the last gush of blood was observed, the pulse became imperceptible in the wrist, returning however in the course of ten or fifteen minutes. A few ounces of spirits were administered to the patient as the operation proceeded. Throughout the process the forefinger of the left hand was the principal instrument, and the scalpels and hooks were employed merely as the means of arming the finger for its various operations. The professional friends who favoured me with their presence were, Dr. Elliotson, Mr. Callaway, Mr. B. Cooper, Mr. Key, and Mr. Morgan. An accident deprived me of the presence and assistance of my friend Dr. Roots. The operation was not undertaken at a venture, but in conformity with certain principles laid down in two papers read before the Medico-Chirurgical Society; the first of them in the year 1819, and the last in the year 1823. The latter, which was not published, contains the proposals for other abdominal operations. The fundamental principles of these operations, as there stated, are rested upon numerous observations made upon the human body, and a sufficient number of experiments upon brutes. Should the case here narrated come before the eyes of the public, I hope it may tend to diminish any unreasonable prejudices against experiments and experimenters. The feeling is respectable, but by the designing it may be misdirected. In Lisfranc's operation I conceive there must be some misapprehension. I think I run no risk in saying, that by his method of procedure, as understood here, what the English accoucheur means by cancer of the uterus, must frequently be irremovable.

It is now five months since the parts were extirpated, and the patient is fat and well, and designs to return to her husband. The interception of the access to the ovaries is a complete security against extra-uterine impregnation. The head of the vagina is closed by the bladder, which lies upon it. The recovery was easy enough, but as the details may, perhaps, be deemed desirable, they shall be communicated at an early opportunity. The patient had been ill for eight or nine months before the operation was performed.

From the Quarterly Journal of Science, Literature, and Art.

ON THE MECHANISM OF THE ACT OF VOMITING. By MARSHALL HALL, M. D., F. R. S. E., &c. &c.

Two opinions have divided physiologists respecting the nature of the act of vomiting. It was originally and long thought that this act consisted simply in a sudden and forcible



contraction of the stomach itself. Afterwards Bayle, and Chirac, and more recently M. Magendie, considered that the stomach is inactive, and evacuated by being subjected to pressure by the simultaneous contraction of the diaphragm and abdominal muscles.

It appears to me that neither of these opinions is correct. M. Magendie distinctly proves by actual observation, and by the substitution of a bladder in the place of the stomach, that the contraction of this organ is not usually subservient or necessary to the act of vomiting. I refer to the interesting paper\* of that eminent physiologist for the more full elucidation of this first question. I proceed to state such observations as appear to me to controvert the second, and to establish that view of this subject which I have myself been led to adopt.

It is obvious that, if vomiting were effected by a contraction of the diaphragm, it must be attended by inspiration. If this were the case, the fluids ejected from the stomach would be drawn into the larynx, and induce great irritation, events which are not observed. These events are, indeed, effectually prevented by an accurate closure of the larynx, a fact observed in an actual experiment by M. Magendie, who makes the following observation:—"Dans le vomissement, au moment où les matières vomies traversent la pharynx, la glotte se ferme très-exactement."† It is astonishing that this observation did not lead its acute author to see that, under such circumstances, a contraction of the diaphragm, unless the thorax followed precisely *pari passu*, was impossible.

Complete vomiting has been observed, too, in cases in which the stomach had entirely passed through a wound of the diaphragm into the thorax, and in which it could not, consequently, be subjected to the action of that muscle.‡ In some experiments, vomiting was observed also to take place, although the diaphragm had been paralyzed by a division of the phrenic nerves, or its influence subtracted by a division of its anterior attachments.§

This view of the subject is still further confirmed by facts, which I now proceed to state, which prove that the act of vomiting is an effort, not of inspiration, but of expiration. This is obvious enough, indeed, on a mere observation of the state of the thorax and abdomen during vomiting. The larynx is evidently abruptly and forcibly closed, the tho-

rax drawn downwards, and the abdomen inwards.

Such, indeed, appears to me to be the precise nature of the act of vomiting, in ordinary circumstances. The contents of the thorax and abdomen are subjected to the sudden and almost spasmodic contraction of all the muscles of expiration, the larynx being closed so that no air can escape from the chest, and the two cavities being made one by the floating or inert condition of the diaphragm. The mere mechanism of the act of vomiting differs little, therefore, from that of coughing, by which, indeed, the contents of the stomach are frequently expelled: the larynx, in the former, is, however, permanently,—in the latter, only momentarily closed; and there is, doubtless, a different condition of the cardiac orifice and of the œsophagus.

It appeared to me, from these views of this subject, that, if an opening were made into the trachea, or through the parietes of the thorax, the effort of expiration constituting the act of vomiting, would issue in expelling the air through these orifices respectively, and the evacuation of the stomach would be prevented; and I determined to submit the fact to the test of experiment. I took a little dog, made an ample opening into the windpipe, and gave a few grains of the sub-sulphate of mercury. The animal soon became sick. The first efforts to vomit induced a forcible expulsion of air through the orifice in the trachea. These efforts soon became very violent, however, and the stomach at length yielded a part of its contents. It was perfectly evident that the violent contractions of the abdominal muscles pressed upon the viscera of the abdomen so as to carry the diaphragm upwards to its fullest extent, and that at this moment vomiting was effected. The act of expiration was so forcible, that a lighted candle placed near the tracheal orifice was several times extinguished. In a second experiment, a free opening was made into the thorax between the sixth and seventh ribs of the right side. The lung collapsed partially only. During the first efforts to vomit, air was forcibly expelled through this orifice, the lung was brought almost into contact with it, the stomach was not evacuated. But as the efforts to vomit became extreme, a portion of lung was driven through the thoracic opening with violence and a sort of explosion, and at the same instant the stomach yielded its contents. These experiments appear to admit only of one explanation, of one conclusion,—that the act of vomiting is a forcible expiratory effort, the larynx being firmly closed, and the diaphragm perfectly inert.

It must be regarded as singular that M. Bourdon, by whom the action of the expiratory muscles, in their various "efforts," has been so well investigated,\* should have adopted other views of the act of vomiting.

\* Mémoire sur le Vomissement, par M. Magendie. A Paris, 1813.

† Mémoire sur l'Usage de l'Epiglote dans la Déglutition, p. 3, note.

‡ Such a case is mentioned by Wepfer. A similar one was also recently witnessed by Dr. Webster and Mr. Hunt. The whole of the stomach was found in the thorax, having passed through a wound of the diaphragm. There was repeated vomiting of a substance resembling coffee-grounds.

§ Œuvres de Car. Legallois. A Paris, 1824, tom. ii. p. 104.

\* Recherches sur le Mécanisme de la Respiration, &c. Par Isid. Bourdon. A Paris, 1820.



It is not intended to state that the act of vomiting is simply such as I have described. There are many facts which appear to show that the œsophagus is not without its share of influence in this act, and it is plain that the cardiac orifice must be freely opened; for mere pressure upon the viscera of the abdomen will not, in ordinary circumstances, evacuate the contents of the stomach. To effect this open state of the cardiac orifice, it is probably necessary that the diaphragm should, indeed, be in a relaxed rather than in a contracted state.

A singular and interesting fact was noticed by M. Magendie, of which he has not given any explanation. During the state of nausea which preceded the act of vomiting, in some of his experiments, air was drawn into the stomach. I am disposed to think that this effect was produced in the following manner: the larynx being closed preparatorily to the act of vomiting, an attempt at inspiration is made before the effort of expiration. In this attempt, air is drawn into the œsophagus, the larynx being impervious, and it is afterwards probably propelled along that canal into the stomach itself. It is not improbable, too, that, in some instances of vomiting, in which the action of the abdominal muscles was subtracted,\* a similar effort of inspiration has drawn substances from the stomach into the œsophagus, which has eventually expelled them by an inverted action. Neither of these phenomena could result from any action of the diaphragm, and much less from contraction of the abdominal muscles. But it is easy, by closing the larynx and attempting to inspire, to draw air into the œsophagus. A similar act, if very forcible, might draw a portion of the contents of the stomach through the cardiac orifice.

Such, then, appears to be the nature of the act of vomiting. How different is this act from one in which the diaphragm does, indeed, contract suddenly, under similar circumstances of closure of the larynx,—viz. singultus: the action of the diaphragm being an effort of inspiration, air is apt to be drawn into the œsophagus with considerable noise; and there is occasionally pain, not only about the insertions of the diaphragm, but about the closed larynx.

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From the London Medical Repository and Review.

**MEMOIRES DE L'ACADEMIE ROYALE DE MEDECINE.**—*Memoirs of the Royal Academy of Medicine.* Vol. I. with Plates. Paris, 1828.

There is no society in the known world where more talent, learning, and industry are displayed, in pursuit of medical science, than in the French Royal Academy of Medicine; a work, therefore, coming from such a body of able men must greatly interest the profession from one end of the civilized globe to the other. This learned Institution was established in December, 1820, by an Ordinance of Louis

XVIII. It was instituted for the special purpose of answering the demands of government in every thing relating to the public health, principally to examine into the history, nature, and treatment of epidemics; of the particular diseases of different countries; of epizooties or the epidemic maladies of animals; to examine every thing relating to legal medicine; for the propagation of vaccination; for the examination of all new remedies, and of secret remedies, of mineral waters both natural and factitious, and of all other subjects connected directly or indirectly with the healing art.

The Academy is divided into three sections—one of medicine, one of surgery, and one of pharmacy—and each is composed of Honorary and of Titular Members, of Associates, and of Adjuncts. Of the titular members, a certain number is to consist of veterinary surgeons; foreigners of eminence are admitted as associates and adjuncts. This learned institution consists of from seven to eight hundred members in all, among whom are several foreigners of distinction. Each section elects its own members, honorary and titular, and its adjuncts. The associates are elected by the academy at large, but the honorary and titular members, and the associates, must be approved by the king before the election is definitive. The election of the adjuncts is confirmed by the academy itself.

The academy holds its meetings either in a body, or in sections. A general sitting is holden every three months, and a sitting of each section takes place twice a month. At the general sittings the affairs of the academy at large are discussed and settled; and all scientific subjects of great importance, requiring the aid of all the sections, are brought forward and discussed on these occasions. The sittings of the sections are devoted to objects of science connected with the special pursuit of each; and if the subject under discussion in one of the sections requires the aid and knowledge of one of the other sections to elucidate it, these two unite for the purpose of discussing it in common. The general Bureau of the academy is composed of a President of Honour, whose office is perpetual, of a temporary President, of a Secretary, and of a Treasurer; and the Bureau of each department consists of a President, a Vice-President, and of a Secretary.

These are a few of the ordinances under which the Royal Academy of Medicine is governed—an institution which reflects more lustre on the French nation than the conquests of Napoleon ever did, when at the highest pitch of his glory, and an institution which forms a good pattern of imitation for all other civilized nations.

A great part of this volume of memoirs, which consists of about 830 pages, quarto, is occupied by the Inaugural Discourse of the president, and by Elogies on the following eminent characters, delivered by the president and secretary; viz. Corvisart, Cadet de Gassicourt, Bertholet, Pinel, Beauchêne, and Bourrou. These, and some other Discourses,

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\* Œuvres de Legallois, tom. ii. p. 105.



take up about 340 pages. The rest of the volume consists of six memoirs from the section of medicine, four from the section of surgery, and six from the section of pharmacy. For the present article we shall take one of the surgical essays as a text.

*a. On Penetrating Wounds of the Chest.* By M. le baron LARREY.

Whatever proceeds from the pen of this surgical veteran will be viewed with much interest. A long career of practical experience, and opportunities almost unequalled by any other modern practitioner, added to a mind expanded by general science, form the basis upon which the works of this celebrated individual are founded. The principal objects of the present memoir are, to show the changes which take place in the form of the thorax consequent on lesions penetrating that cavity; to prove the necessity of and to show the best mode of performing the operation, for empyema when there is reason to believe that much blood is extravasated into the bag of the pleura; and to prove the advantage of the new method of treatment in these lesions, namely, of simply letting out the extravasated blood and of keeping a tent in the depending wound made by the operation, over the old method, of injecting astringent lotions into the cavity of the chest.

"Penetrating wounds of the chest vary, 1st, according to their form and directions; 2d, according to their depth and the nature of the lesion of the organs; 3d, according to the effects of this lesion on the vital properties of these organs, &c." When a sword or any other clean cutting instrument, penetrates the sac of the pleura, without producing any lesion of the lungs, or of the nerves or vessels of the thoracic parietes, the wound is simple, and requires merely to have its edges brought into contact, for an union to take place. The patient must be kept quiet, he is to take cooling drinks, and, if necessary, to have blood locally abstracted from the neighbourhood of the wound. These are all the means that are requisite to be resorted to, generally, in wounds of this simple nature.

But when the injury is complicated with lesions of the thoracic organs, it assumes very different characters. When the lungs, for instance, are wounded, immediate effusion of florid, frothy blood takes place; oppression; emphysema sometimes round the wound; spitting of blood; severe local pain; respiration is short and laborious; the visage palid; the vital forces feeble; the pulse small, accelerated and tremulous; animal heat is diminished, and the feet become cold; the patient sinks into a state of great anxiety, and frequently sighs. If the wound be large and deep, and attended with the above described symptoms, and if the patient be left to himself, death generally follows very soon; for, first, there is no resistance opposed to the blood poured out of the divided vessels; second, the irritation produced in the injured vessels and in the lungs themselves, and the contact

of the external air, act as causes in keeping up hemorrhage, and in producing nervous spasm. Baron Larrey's views with respect to the influence of the external air in keeping up hemorrhage from divided vessels, are different from those of Mr. Abernethy, who, in his lectures, says that arteries will often bleed when the injured parts are imbedded in blood, but the bleeding ceases when the cut extremities of the vessels are exposed to the air. We certainly find this to be the case on the surfaces of stumps, where the parts are fairly exposed; but in penetrating wounds, which are generally filled with blood, so that the air is prevented from coming fairly in contact with the wounded vessels, the pressure or resistance which the effused blood exerts on these vessels, must act materially in preventing or in diminishing further effusion. This fact is exemplified in aneurisms arising from puncture of the arteries. The wounded artery pours out its blood into the cellular membrane, which forms a sac, the fluid contained in which prevents further effusion; whereas, if the wounded vessels, partially cut across, were fully exposed, and deprived of any pressure, fatal hemorrhage would take place in some instances, in which, from the barrier opposed by the effused fluid, only a few drachms of blood is thrown out. This is a fact which Baron Larrey insists on with respect to wounds penetrating the chest, complicated with lesion of the thoracic organs.

If we treat these wounds after the old method, still used by many practitioners, we augment the irritation of the injured parts; we provoke acute inflammation of all the organs contained in the cavity, and produce, incessantly, a renewal of the hemorrhage. Thus, introducing a canula into the chest, for favouring the evacuation of the fluid; the suction or the absorption of the fluid; the introduction of tents into the wound to keep the edges asunder—means which form the basis of the ancient method—can only tend to aggravate the mischief without suppressing the effusion, which is immediately reproduced with additional force, if previously stopped, when these applications are used.

It is seldom, except when the ribs are either cut across or fractured, that the intercostal arteries are injured by the instrument in its passage between these bones, for these vessels are protected behind by the edge of the groove in which they are imbedded, and their anterior extremities, where they are most exposed to the action of the instrument, are so small that little hemorrhage would take place, even if they were divided. Besides, these arteries, so free in their course, easily retract, and become obliterated by the slightest resistance. It is sufficient to close the wound to put an entire stop to the bleeding from these arteries. Experience has often verified this assertion to M. Larrey; and he has never found it necessary to apply a ligature to the intercostal vessels, nor has he used any other means than simple compression to prevent effusion from them.



A lesion of the pericardium alone is easily distinguished from that of the lungs. In wounds of the former, the blood which flows from the chest is not frothy; the oppression is less than when the lungs are injured; but the beatings of the heart are quicker; the local pain is very acute, and is accompanied with spasms, extending, more or less distant, along the course of the phrenic nerves; for it is seldom that the pericardium is wounded without some injury being done to the branches of these nerves.

Baron Larrey has never had an opportunity of verifying, by post mortem examination, whether certain wounds of the heart be susceptible of cure, but he is of opinion that they are.

The author remarks, that the evil arising from the presence of blood in the cavity of the pleura, is not to be compared to that produced by an attempt at sucking out the fluid through canulæ, or by syringes, as has been generally recommended; and that the effused blood, unless the quantity is very great, will be absorbed, "not by the lymphatic vessels, as has been believed until the present day, but by the capillary veins, which ramify on the internal surfaces of the serous membranes, or in the cellular tissue." As absorption goes on, the surrounding organs develop themselves, and expand gradually so as to fill up the vacant space. Mr. Larrey has witnessed a great number of facts of this kind, where remarkable spontaneous cures took place, and with promptitude in proportion to the youth of the subjects and to the efficacy of the artificial means employed to assist the powers of nature. These means consist in closing the wound so as to exclude the entrance of air; in general and local blood-letting during the inflammatory period; in the application of cupping-glasses, blisters, and moxa, to the affected side, &c.

But if the effusion is considerable, and if it has taken place suddenly from lesions of some of the large vessels, so as to fill entirely one of the thoracic cavities, the resources both of nature and of art are then insufficient to remove the extravasated fluid, and a counter-opening becomes indispensable, unless the wound, which gave rise to the extravasation, be in a position low enough to give vent to the effused blood. It is necessary to be acquainted with the symptoms indicative of the quantity of blood in the thoracic cavity, in order to enable us to judge of the probability or improbability of its being absorbed. The first symptoms by which we are here to be guided are, the force of the primitive hemorrhage, the depth of the wound, and the size of the wounded vessels; but these symptoms can only lead to an inference of the mischief done. The symptoms which point out great extravasation are, the extreme debility or collapse into which the patient falls, which is manifested by the smallness and feebleness of the pulse, pallor of the skin, coldness, beginning at the extremities, and extending from thence over all the body. Other more characteristic symptoms succeed these first phenomena. The side in

which the extravasation has taken place is more elevated than the other, the ribs are separated to a greater distance from each other, and no motion is carried on in them. *Per-cussion, instead of imparting a heavy and obscure sound to the ear, emits a sound clear and sonorous*, a phenomenon which M. Larrey has oftentimes verified, though it appears contrary to the laws of physics: the patient is always desirous of reclining to the side of the injury, and of retaining, as much as he can, a sitting posture; because then the fluid presses less on the mediastinum and the diaphragm, than if he lay on the opposite side, or flat on his back.

These are the leading symptoms which the author mentions as characteristic of much effusion in one of the thoracic cavities, and which point out the necessity of performing the operation for empyema. But this operation is not to be resorted to until there is a certainty that the internal hemorrhage has ceased. The cessation of the effusion is announced by the development of warmth over the system, by the elevation of the pulse, by a return of colour to the skin, and by an augmentation of all the vital forces; respiration is more free; the pulsation of the heart is stronger and more equal; in fine, the sanguineous fluid which escapes from the wound, if not united, is no longer of a florid, vermilion colour, but is, on the contrary, black and carbonized. This internal hemorrhage is arrested by the obliteration of the wounded vessels and the obstruction of their coats, owing to an adhesive inflammation taking place in the points of contact.

These symptoms of reaction or return of the vital powers, coupled with those indicative of non-absorption of the effused fluid, prognosticate the necessity for making a counter-opening for the discharge of the extravasated blood. Our learned author proposes the following questions;—In what quantity of fluid should we be justified in resorting to this evacuation? Is the fluid to be evacuated partially and gradually? or is the whole of it to be abstracted at once? In deciding the first question we must be guided by the severity of the symptoms; but with respect to the others, experience has proved to the author that it is better to accomplish a complete evacuation of the fluid at once and uninterruptedly; for if any be allowed to remain after the air has had access to the thoracic cavity, putrefaction takes place, followed by all the evil effects which usually occur under such circumstances.

M. Larrey recommends the incision to be made as far backward as possible; if on the right side, between the eighth and ninth ribs, counting from above; if on the left, between the ninth and tenth ribs. The air must be prevented as much as possible from entering the chest during the operation, as well as after it. In order to accomplish this, the skin is to be drawn up over the rib before the incision is made, so that, after the fluid has been evacuated, it may slide down again and cover



the opening leading into the thoracic cavity.

After the fluid has been totally evacuated, one end of a slender fillet of lint, covered with cerate, is to be introduced into the cavity of the chest, and the other end fixed to the dressings. This fillet will favour the discharge of the fluid, prevent the adhesion of the wound, and keep the air from entering the thoracic cavity. This is to be allowed to remain in for about eight days, till suppuration has taken place in the edges of the wound, when it then becomes fistulous, and gives ready exit to any discharge which may take place from the cavity.

If the wound of the chest has been produced by a ball, the effects are according to the parts injured and the course which the projectile followed in the thoracic cavity; whether it penetrated to any great depth, or whether it lodges in the cavity. It is seldom that these foreign bodies, unless very small, penetrate the chest without producing a fracture of some of the bones forming the parietes. In these cases it is necessary to enlarge the external wound, in order to be able to extract any splinters of bone which may be loose and divested of periosteum, if any exist. This must be done with great caution, for fear of injuring the blood vessels running along the lower margin to each rib. Any spiculæ of bone standing out from the fractured surface must be removed by a pair of nippers. This being done, if the ball have not made its exit, every point of the side opposite to its entrance is to be examined, and, if found, it is to be extracted when that can be accomplished. If, on the contrary, the ball lodges in the thoracic cavity, we sound the wound with great caution, and, if discovered, it is to be immediately extracted.

Baron Larrey has seen many subjects in the parietes of whose chests balls of different sizes had remained for years, without causing any remarkable inconvenience. In others they have caused great irritation by their presence in these cavities, and have produced serous or purulent empyema, so as to require a counter-opening to be made for their extraction; and this operation is often very difficult to accomplish.

The change which some of these wounds produce in the conformation of the chest is very remarkable, when the operation for empyema has been performed. Baron Larrey has given two drawings to represent this change. One is that of a soldier, who received two wounds, during a single combat, in his right side. The instrument in its course divided a great part of the lungs and the root of one of the intercostal arteries. Profuse internal hemorrhage immediately took place, attended by great depression of the vital functions. The patient, however, rallied beyond all expectation; but on the third day he committed an excess, in eating bread and meat, which produced a renewal of the hemorrhage. This had scarcely stopped when he committed another excess, which threaten-

ed his life. The hemorrhage, however, ceased the third time, and after having allowed the vessels some days to close their extremities, M. Larrey evacuated the effused blood. The patient ultimately recovered; but his physical characters underwent a total metamorphosis; the functions of the respiratory organs, as well as of the heart, received remarkable modifications, but such as that life and health resumed a new equilibrium, as firm as that which existed previous to the accident. The side of the chest on which the injury was inflicted became considerably reduced in its circumference; the ribs lost a great part of their curvature, and came into immediate contact with each other; the shoulder of the same side sank much lower than the other; the trunk inclined towards that side; the pulsation of the heart was no longer felt on the left side, for the organ receded towards the right, and could be felt beating on the right side of the sternum, against the cartilages of the eighth and ninth ribs. The diaphragm was considerably elevated on the right side, with all the viscera suspended to its vault; a part of the right lung became hepatized and increased materially in volume, in order to produce a complete obliteration of the enormous void which the evacuation of the fluid had caused. The axillary vessels and nerves became enveloped in this fleshy inorganic mass, and the arm and abdominal members were reduced to a state of atrophy; whilst the left cavity of the chest became dilated in the same proportions, and the parenchyma of the lungs of that side acquired double its dimensions; thus the patient respired by that lung alone.

These are the leading points touched upon by the author in his memoir on wounds penetrating the cavities of the chest.

From the *Lancet*.

#### ON THE BILATERAL OPERATION FOR STONE, as performed by Baron DUPUY-TREN.

The origin of the bilateral operation is involved in some degree of obscurity; Broomfield in England, and Chaussier and Beclard in France, were led by reflection on a passage in the twenty-sixth chapter of the seventh book of Celsus, to suggest this operation; and, from the words of Celsus, it is not improbable but that the bilateral operation as now performed, was the one which he described. Be this as it may, a point of no great importance, the merit of being the first to perform it on the living subject is now generally, and, we believe, correctly, ascribed to Baron Dupuytren. His mode of operating is as follows:—

The patient being placed as in the lateral operation, and the staff being introduced and given to an assistant, the operator, with the right knee resting on the ground, places the thumb of the left hand on the tuberosity of the right os ischii, and the fore-finger of the same hand at the base of the scrotum, and, in



this way, puts on the stretch the skin of the perineum. With the other hand, the operator takes a straight scalpel, and introduces it on the right side of the perineum, ten or eleven lines from the raphe, and directs it to the left side, describing a slight curve. The centre of the incision should be from six to seven lines in front of the anus in children, and nine to twelve in adults. The parts divided in the first steps of the operation, are thin subcutaneous cellular tissue, perineal fascia, ejaculatores urinæ, and a few fibres of the transverse muscles.

The first part of the operation being finished, the surgeon introduces into the centre of the wound the extremity of the left forefinger, for the purpose of feeling the membranous portion of the urethra and the staff. Then the nail introduced into the groove of the instrument, serves as a guide to the scalpel, the cutting edge of which directed at first backwards, divides this portion of the canal, and then returned, prolongs the incision towards the superior part. As in the motion thus communicated to the knife, its escape from the groove of the staff might take place, Baron Dupuytren advises a double-edged scalpel to be used, although he generally employs a common scalpel himself.

When the urethra has been divided to the extent of six or eight lines, the nail being still kept in its situation, the lithotome is introduced. The operator then takes with the left hand the staff, and slightly depresses the handle, whilst the lithotome is pushed forwards, the concavity being turned upwards. When the lithotome reaches the extremity of the groove, it must then be disengaged from the groove, and the staff withdrawn. It is then turned, so that its concavity looks downwards. This turning of the instrument is necessary; for if it were opened whilst its concavity was turned upwards, the two blades would be perpendicular to the direction of the vessels, and these would then inevitably be wounded, an accident which will not occur if the concavity be downwards, as both blades will be then parallel to the rami of the ischia. The lithotome being in this situation is opened at No. 14 for children, and No. 15 for adults, and is then withdrawn with great precaution. When the operator finds, from the resistance being overcome, that the neck of the bladder and prostate are divided, he ceases to press on the part which communicates with the blades, by which they return into their sheath. It is the double incision which constitutes the great advantage of the bilateral over the internal operation, as performed in England.

The forefinger of the left hand is then introduced into the wound, and a blunt gorget, with the concavity upwards, is passed into the bladder when necessary, by means of which the forceps are introduced into the bladder, and the stone withdrawn.

Baron Dupuytren has performed this operation twenty-six times, with the loss of one case

From the Medico-Chirurgical Review.

#### SENSATION—MOTION—VOLITION.

From a little memoir lately published by Magendie, (and translated into English) on some recent discoveries relative to the functions of the nervous system, we have selected the following extract, as both curious and interesting.

“Undoubtedly, it would be of the utmost importance to ascertain how sensation and motion,—which, as it has just been stated, have their seat in the spinal marrow,—are propagated to the head, and extended to the brain and cerebellum; or, to be more explicit, how the impressions perceived by the senses and the determinations of the will are transmitted to the spinal marrow. Here experimental difficulties become almost insuperable; and I must confess that up to this day I have reaped nothing satisfactory on so delicate a question, and one which appears intimately connected with the most important secret of life.

“The innumerable experiments I have unsuccessfully tried hitherto, have, however, enabled me to ascertain one fact, which appears to me worthy of being noticed by physiologists, and respecting which, as far as my information goes, nothing yet has been advanced.

“If in a living animal you deprive the cerebral hemispheres of the power of acting, the animal will run straight forward with astonishing rapidity, as if propelled by some invisible and irresistible hand. If, on the contrary, the cerebellum be deprived of the power of acting, locomotion assumes quite an opposite course—the animal recedes. It is a most remarkable phenomenon, for instance, to witness a bird, slightly wounded in the cerebellum, effect, for several successive days together, no other motions, either for walking, swimming, or flying, except in a retrograde direction.

“There should appear to result from these experiments, that any animal, otherwise enjoying its natural state of health, is placed, as it were, between two powers, which counteract and balance each other—the one impelling forward, the other backward; and that these two powers are completely under the influence of the will.

“A disease of the horse, and which is not generally known, seems perfectly calculated to elucidate these last results. Farriers term it *immobility*; and, in fact, if you attempt to drive the animal backward, let the means and strength you resort to be what they may, it remains rivetted to the spot,—the motions forward, on the contrary, are remarkably easy, and at times seem to be effected independent of the will.

“If the consequences I have just drawn be correct, the disease must consist of some physical alteration of the brain, or in some obstruction or other in the action of that organ.

“A few days ago I had two horses afflicted with immobility examined, and my conjecture was perfectly correct. In both, the brain was evidently diseased, and the cerebellum perfectly sound.

“It then appears demonstrated, that these



two opposite powers of the brain and of the cerebellum exist in animals; and that in some peculiar cases these powers may resist the influence of the will.

"Is this the case with man? Can our motions, which execute with so much precision the dictates of the will, cease to obey their commands, and be, as it were, in a state of rebellion? Finally, is the faculty of volition distinct from that by which our motions are regulated? Such are delicate questions we hardly dare to venture upon—they seem to lead to arduous abstractions, the insuperable limits of human understanding; but, however, I have witnessed myself, and I have had an opportunity of studying for several successive weeks, in a well-informed man, perfectly qualified for self-observation, a complete distinction between the will and that power by which our movements are regulated.

"Subsequent to violent grief, the person I allude to, to his utmost surprise, was suddenly deprived of the influence of his will over his motions; in spite of himself, he was compelled to assume the most ridiculous attitudes, and to make the most extravagant contortions. The eccentricity of his actions and postures baffle all description; in certain cases his motions would be natural: thus, without the slightest intervention of his will, he was seen to rise and walk precipitately forward, until he came in contact with some solid body that impeded his course;—at other times he would recede backward with equal promptitude, until he was checked by some similar cause. In other instances he was observed to recover the use of certain motions, and to remain incapable of directing others. It was thus that his hands and arms frequently obeyed the dictates of his will, and more frequently again could he regulate the muscles of his features, and those connected with the organs of speech. At times he was allowed to walk backward, whilst his progress forward became totally impossible; he then would resort to this mode of progression to reach the objects he had in view. This state lasted four calendar months, and terminated most successfully. A few grains of a substance which chemistry has lately discovered, (the sulphate of quinine,) sufficed to confine his motions to the immediate dictates of his will.

"It may then be correct to admit, that the faculty of volition is perfectly distinct from that faculty by which our motions are directed and classified into regular acts. Such is the only consequence I wished to infer from the fact I have just stated. Several others rush to the mind,—to follow them up would make a metaphysician of me, and I mean to remain a physiologist."

From the Medico-Chirurgical Review.

A PRACTICAL TREATISE ON THE TYPHUS OR ADYNAMIC FEVER. By JOHN BURNE, M. D. &c. &c. Octavo, pp. 248.

Perhaps there is no class of diseases which has attracted more attention, or given rise to a greater variety of sentiment and discussion,

VOL. II.—3 I

than fevers. The frequency of their occurrence, the fatality of their character, and the obscurity in which they are involved, are inducements sufficient to elicit the most patient investigation. But, as in almost every other subject of difficulty, the progress made has not been in proportion to the amount of labour; and, whether we examine their etiology, pathology, or treatment, it is much to be feared that few of our modern writers are more orthodox in their views than the Sage of Cos. The constant bias that exists in our profession to study Nature through the medium of prejudice, to extract general inferences from premises that are particular, and to invest effects with the importance of causes, has cruelly retarded the march of its improvement. It is a science of itself to know how to distinguish facts from fancies, and to ascribe to phenomena, as they rise, the rank and value which Nature has assigned them. Because intestinal disease is a frequent result of fever, it has been inferred by many that fever is its consequence; and, because the brain and its appendages are often found vascular or inflamed, it has been hastily assumed, that the *sedes et causa morbi* are to be found in the brain, and in the brain only. Such exclusive doctrines are the product of partial and undigested views, and the practice they recommend is, consequently, confined to the relief of a few out of many symptoms.

We are, therefore, pleased to find that our present author has taken a more *systematic* view of this disease, and that, while Broussais and Clutterbuck insist upon its *organic* character, we have Burne to add to the number of those, who are not less successful in their practice, while they are more extended in their etiology.

But, while we hail Dr. Burne's escape from the schools of the localists, we fear that he has received a lesson out of that of Brown; for, although he refuses to confine fever to a certain seat, he hesitates not to confine it to a certain character. After dividing fevers into such as are inflammatory and adynamic; and subdividing these into such as are purely inflammatory and purely adynamic, and those accompanied by local inflammation, he rejects the generic term *typhus*, to which we have been hitherto accustomed, and adopts the word *adynamic* as a more eligible title, within which he includes "the putrid or malignant fever of Sydenham; the slow nervous fever of Huxham; the nervous fever of common language; the synochus, typhus mitior and gravior, of Cullen; the jail and hospital fever; the *fièvres essentielles* of the French; the epidemic of the Irish writers; the contagious of Bateman; the typhus of Dr. Armstrong; and the proper, idiopathic, or essential fever of Dr. Clutterbuck." P. 8.

Had Dr. Burne confined his epithet *adynamic* to the lowest and most atonic forms of fever, perhaps the change, which he wishes to introduce into our nomenclature, would have been useful, and might have been adopted; but we cannot silently subscribe to an



alteration, which is founded upon, and inculcates the old doctrine of debility; a doctrine, which, however ornamented by the ingenuity of Brown, and however countenanced by vulgar prejudices, has been productive of infinite mischief to men and to medicine. Holding, as we do, fever, in the abstract, without relation to peculiar epidemics, constitutions, and circumstances, to be more or less a tonic disease, where the whole system is under excitement, and where every texture and organ are stimulated to an inordinate degree, we cannot sanction an epithet which gives the reader, *in limine*, what we deem an erroneous view of its real nature. To designate by the same title the synochus and typhus gravior of Cullen, the putrid fever of Sydenham, and the brain fever of Clutterbuck, is, to say the least of it, indiscriminating and unsafe; not that we imagine they are different in essence, (with Dr. B. we believe them to be the same, "differing only in degree," as he rightly observes, "and modified by circumstances;") but, because the symptoms *are* different, and the treatment *ought* to be different. Our author admits that the debility, which exists in fever, is what Brown would have called *indirect*, and not "ordinary debility," p. 11; but the term *adynamic* (which, in truth, explains itself) signifies not *depression*, but *want* of power, or absolute debility; and, consequently, conveys a meaning very different from that which the writer's own admission required.

We have already stated that Dr. B. following the example of Pinel, divides all fevers into two great classes, viz. inflammatory and adynamic. These he subdivides into simple inflammatory and simple adynamic fever, and inflammatory and adynamic fever complicated with local inflammation: but, as his work is confined to the two varieties of adynamic fever, the observations which follow will, of course, be restricted to them.

"In order to the production (says the Dr.) of the adynamic fever, it is necessary that there be a certain state of system, which state depends, in most instances, on a continued exposure to a poisoned or contaminated atmosphere. This state then existing, it will be found that the adynamic fever attacks in two ways; and, it is of great importance, that these should be clearly understood, because they account for the presence or supervention of inflammation in some cases, and the absence of it in others, and thus afford evidence that certain modern theories are not founded on correct principles. In the one way, then, it attacks through the intervention of an accidental cause; in the other without such intervention. When the attack is without the intervention of an accidental cause, the condition of the body is, of itself, sufficient to stir up and give rise to all those actions and phenomena which constitute the adynamic fever. But, when the attack is with the intervention of an accidental cause, the condition of the body, though not sufficient of itself to produce the fever, is yet sufficient to give to the fever thus accidentally produced, the peculiar adynamic

type. In the one case, the development is slow and progressive, requiring many days or even weeks; in the other, it is fully formed in a few hours." P. 14.

He then details the symptoms of attack in both ways, merely differing from each other in the rapidity of their progress, and then remarks, "When it attacks without the intervention of an accidental cause, so far as I have seen, the attack is not accompanied with any organic inflammation;" it being only in such cases as occur through some accidental cause, as a severe cold, exposure to rain, wind, &c. "that organic inflammations are apt to accompany it from the beginning." 17, 18.

The accuracy of these observations we are somewhat disposed to question.\* That the febrile poison often lies latent in the constitution for a long time before its existence is announced by appropriate symptoms, is a fact as well established as it is important; and, that the development of these symptoms, in different cases, occupies very different periods of time, is not to be disputed; and, moreover, that there are instances, in which the pathognomonic signs of this disease suddenly and unexpectedly supervene to a perfect state of health, is certain; but, that fever is never accompanied by inflammation, when it attacks without the intervention of an accidental cause, is a position to which we cannot assent. Had Dr. B. required us to believe that inflammation occurred *less frequently* in such cases, his requisition would have been more reasonable; for, it is unquestionable, that the more sudden the excitement is, the less time and power have the weaker organs to resist, or adapt themselves to an increase of action, and the fainter is their chance of escape. We believe there are few examples of what our author calls *simple adynamic fever*, or fever unaccompanied by any organic inflammation. We have inspected many bodies after death, and seldom have we failed in detecting the effects of phlogistic action; and if symptoms during life be minutely watched, we hesitate not to aver, that the experienced observer will generally be able to point out the organ, on which the circulation preys with predominating force. Organic inflammations are not the essentials but accidents of fever, the frequency of whose occurrence is more in proportion to the susceptibility of individual texture, than to the peculiar nature of the exciting cause; and, whether the attacks arise from exposure to cold, or exposure to contagion, the number and nature of the organs affected will mainly

\* We imagine that every cause of fever is *accidental*, and that, although some may operate more actively and suddenly than others, fever cannot arise without some *accidental* cause. Respiring a contaminated atmosphere is as much an *accident* as respiring a cold atmosphere; and we are not aware, that any one is exposed, by a *fatal necessity*, to be assailed by this or any other disease. The above division is, therefore, built upon a distinction without a difference.



depend upon their state of health before the excitement has commenced. Very rarely, we fear, does it happen, that all the parts of our complicated system are equally healthy, and can equally resist the inroads of disease; and we are taught by the simplest law in mechanical philosophy, that the weakest portion of a structure, equally assailed, will be the first to strike to the assailing power.

"The adynamic fever, then, being produced in either of the two ways of attack just described, will be found to differ very much in severity, for which reason and for practical purposes it is expedient to divide it into degrees; and these may, with great propriety, be limited to four." 19. In the first occur slight headach, impaired appetite, tongue moist but white, except at the tip, which is red, flushed cheeks, suffused eyes, slight dusiness, and increased heat of skin, red and scanty urine, slow bowels, prostration of strength, and blunted senses. In the second degree the pulse is frequent, "*rather full and rather strong*," the headach increases, the tongue is more coated, the skin is hot, (shivering or sense of cold, although one of the most frequent and familiar febrile symptoms, is never mentioned,) the bowels are more inactive, and, in short, the symptoms of the first degree are much aggravated. In the third grade, the strength is much prostrated, the patient is averse to the slightest exertion, the respiration labours, the muscles twitch and tremble, the senses are more torpid, the headach becomes more dull, and is often accompanied by a sense of weight or sound, the thirst is excessive, (this is the first time that the symptom is noticed,) the countenance is inexpressive, the flush upon the cheek is now more purple than red, the eyes are suffused, glassy, and vacant, half closed by a relaxation of the upper eyelids, and besmeared with shreds of mucus, the lips are either blue, or with the teeth covered with black sordes, the breath is very offensive, (there is no notice taken of that peculiar odour which is exhaled from the surface of fever-patients, and than which nothing is more characteristic of this disease,) the tongue is thickly coated, brown and dry in the middle, red and dry at the tip, and whitish and moist at the edges, the "*pulse seldom exceeds 90, it is fullish, and sometimes rather firm*," the skin is dry and variable in temperature, the urine is turbid when cold, the abdomen is full and tender on heavy pressure, (this is the first notice of a symptom which, we imagine, will be much more frequently found in the two first than the last degrees of fever; for, it is a very important fact, that intestinal disease may go on to a destructive extent, when the sensibility is blunted by an oppressed cerebrum, without betraying even its existence under the very firmest pressure, and this is a circumstance which ought to be largely insisted on, and carefully remembered,) the bowels are generally slow, but sometimes lax, and the stools are very offensive; there is much restlessness and delirium, but especially during night. The pa-

tient does not, in general, remain long in this state. If he recover, his symptoms either gradually decline, or more rapidly disappear upon the supervention of some critical discharge, as epistaxis, diarrhœa, or a profuse sweat; but, if he sink, his delirium becomes constant, he talks incoherently, or screams, or mutters; his jacitation is incessant, or his prostration so great, that he lies prone and motionless, his lethargy increases, his skin becomes cold and purple, and, the vital function ceasing, the curtain drops. In the fourth and last degree, all the symptoms already specified, become very severe, immediately the fever is formed, and run hastily on to a fatal termination; but, as there is nothing peculiar in them, it is unnecessary to follow the author's delineations any further. In a malady so interesting as fever, our investigations cannot be too minute, so long as they are instructive; but, we had rather Dr. B. had traced its symptoms through four different stages than four different degrees, in as far as all these degrees frequently occur during one and the same attack, equally requiring the same variety of treatment.

The second chapter is devoted to some peculiarities from the ordinary combinations of symptoms, for which the author furnishes us with a rationale, by referring to the character of the exciting cause; how, in one case, in which head symptoms had been the most severe, the patient had replaced upon his head a cap that had fallen into the water; and, in another, how the abdomen was principally involved, by the patient having been previously subjected to hard labour. But, why hard labour should not injure the lungs as much as the abdominal viscera, the author leaves us to explain. The truth is, that he might have furnished many such instances of febrile *partialities*, which admit of no elucidation by a reference to the exciting causes, and are only to be accounted for on the principle already stated. The following remarks upon Dr. Armstrong's variety of congestive fever we leave to the consideration of our readers:—

"There is a congestive state also, which, now and then, happens at the beginning, or during the course of the adynamic fever. In this state, there is great and often dangerous depression of the vital powers; so that, instead of hot skin and accelerated pulse, the temperature of the surface is below the natural standard, and the pulse slow and feeble. The skin of the whole body is very dusky, and the hands, feet, and lips of a leaden hue; all, evidently, arising from a congestion of the venous system, the result of feeble and slow circulation; now to this state has been given the term congestive fever, but this is a nosological solecism, for that condition cannot be called fever, in which the signs of fever do not exist; and there is here neither heat of skin nor accelerated pulse, both which are necessary to constitute fever. The appellation is not consistent with the condition specified, and, therefore, is not correct." P. 37.

That the pulse is, in general, the safest in-



dex of the activity of the heart, and that the use of the lancet in disease ought generally to be indicated by the energy of this organ, are points in therapeutics which few can question; but, that there may be instances, even in adynamic fever, in which other symptoms than the pulse form more useful, because more practical guides, is an important fact, of which our author seems not to be sufficiently aware. After very considerable depletion, without relief, when the pulse had become *apparently* weak and incompressible, we have seen a few more ounces entirely remove the disagreeable symptoms, and the patient get rapidly well; and, in several instances, we have found, that taking away six or ten ounces, has changed the character of the pulse from that of *masked* debility to strength, requiring further depletion to control it. Our experience, therefore, in such cases, prevents us from adopting any universal rule; and, when we find our author asserting, that in fever "the pulse is never full and strong, and is not firm," (p. 54) we are still less inclined to receive, without some qualification, his remarks upon a point of so much importance. We are not advocates for bleeding largely in the last stages of fever, nor do we wish to advocate the practice of treating fever, in the first stage, as a *purely* inflammatory disease; but, we maintain that copious and repeated depletions are often safe and even necessary, and, that, while the pulse is sometimes restrained, and simulates weakness through want of bleeding, rising in force and frequency under the use of the lancet, it will frequently be found *full, strong, and firm, not retreating from the finger, nor leaving upon it a slight and transient impression*. Our author will, perhaps, permit us to observe, *en passant*, that his theory of the state of the circulation during fever is built upon several physiological points, which themselves require a foundation. The tonicity of arteries, their power of contracting upon their contents, the assistance given to the venous circulation by muscular contraction, and the necessity of a large column of blood in the arteries to preserve them from collapsing, are positions which have not been proved, and are no more than probable.

In fever, throughout all its degrees and stages, the tongue is a matter of much importance, and merits the most particular and constant attention. If carefully watched, it will often indicate, with accuracy, the mucous condition of the stomach and intestines. With this view, the following remarks are very valuable.

"These different states of the tongue correspond with the different states of the alimentary canal. When the tongue is moist, the coating of a light shade and not thick, and the redness of the edges and point not deep, the belly is in a natural state, and so it remains when this tongue becomes clean and of a natural appearance. Where the tongue is dry or parched, the coating dark or black, and the edges and point of a deep red, the belly is flatulent or tympanitic, and, tender, in a cor-

responding degree: the bowels are relaxed, and the dejections dark or black, and highly offensive, constituting the 'dark or black offensive diarrhœa' to be spoken of hereafter. When the tongue has cleaned, and is left smooth, moist, of a raw red, and tender, sensible and sore, this state is accompanied with subsidence of the tympanitic belly and with relaxed bowels; but the dejections are now ochre-coloured, and much less offensive, constituting the 'ochre-coloured diarrhœa' to be spoken of hereafter. In those instances where, at the decline of the fever, the tongue is left preternaturally clean, but instead of being moist, is dry and shining in the middle and at the point, as if polished, the belly remains tympanitic, more or less; and although the diarrhœa is ochre-coloured, the dejections continue highly offensive, which will be explained when the 'ochre-coloured diarrhœa' is considered. When the adynamic fever is combined with rheumatism, the character of the tongue is modified, and the foul surface is made up of a mixture of the dirty coating, peculiar to the adynamic fever, and the white fur peculiar to rheumatism; and when it becomes clean, the surface will be whiter, and the substance paler, than when rheumatism has not existed." P. 61.

It frequently happens in those cases of fever, which have arisen from, or have been accompanied by neglected bowels, that the abdomen is more or less tympanitic, and betrays considerable tenderness under firm pressure. In such instances, there can be no doubt, that this accumulation of gas is often the product of retained feces, and will generally disappear with their removal; but, that this tympanitic condition does not *always* arise from constipation is certain, since we daily see febrile patients, after a tardy course of illness, with distended bellies, yet, whose primæ viæ have been carefully cleared out at the commencement of the disease, and preserved regular throughout it by mild aperients. Indeed, the most marked and obstinate cases of tympanitis, which we have witnessed, occurred during convalescence, and, probably, depended upon the debilitated state of the alimentary canal, from a continued course of purging.

Dr. B. in this symptomatology enumerates diarrhœa, which he distinguishes into two kinds, "the black offensive diarrhœa," and "the ochre-coloured diarrhœa;" the former accompanying the most aggravated periods, and the latter the wane of the disease. But we much question whether the regularity of the phenomenon entitles it to rank among the common symptoms of fever, and also, whether, when it does appear, its character sanctions such a distinction. Except in the enteritic forms of typhus, where the mucous lining of the bowels is the principal domicile of diseased action, and when its irritability is easily excited by the gentlest stimuli, constipation, we apprehend, is a more regular attendant than diarrhœa. If the brain or lungs be chiefly affected, the bowels are generally confined and dull, and seldom, in such cases, do they act without the aid of



medicine, unless Nature has chosen them as the outlet, through which, by a critical discharge, she intends expelling the disease. Besides, the external character of the dejections vary daily with the symptoms and progress of the disease; sometimes assuming a more natural, at others a more diseased aspect. During the first stage, while we are unloading the intestines of their accumulated contents, the stools are, in general, both dark and offensive; but, so soon as the discharge has been removed, they put on many varieties of appearance, according to the medicines given, to the inveteracy or mildness of the existing symptoms. Dr. Bright believes that ochre-coloured dejections indicate, either the presence, or approach of ulceration of the bowels; and, although this remark may be disputed as a general observation, we believe experience will warrant the assertion, that, when the intestines are nearly empty, as they are throughout the greater part of fever, treated as it now is with so much opening medicine, and the mucous membrane is excited to an increased secretion, the dejections will be found either yellow, or of a light colour.

The following observations, upon the connexion between ventricular effusion and retention of urine, are, we fear, more ingenious than just.

"There would be little difficulty or attendant danger, were the patient able to direct the attention of the physician to his local distress; but this he is rendered incapable of, by his general insensibility and confused perceptions. The distention of the bladder, therefore, goes on, and with it, distention of the ureters, infundibula, and pelves of the kidneys. The great pressure of this distention *resists* the distillation of the urine from the mammary processes and uriniferous tubules: the secretion itself is also *thereby* diminished; and *then supervene* the phenomena and effects of suppression of urine; *namely, effusion into the ventricles with its concomitant signs*. The secretion of urine being only diminished, not altogether suppressed, the bladder would inevitably burst, was it not that the pressure eventually overcomes the resistance of the sphincter, and the urine drips away, forming also incontinence. Yet notwithstanding this overflowing, the bladder is only secured from bursting, for the great distention and pressure continue, and oppose the secretion of urine, and thereby encourage and augment the ventricular effusion." P. 72.

We believe we may safely assert that the prevailing opinion is the very opposite of that contained in this extract. That deficiency of secretion, or retention of urine may *augment* effusion within the head, it would be unphysiological to deny; but, that this effusion is the *sole result* of such non-secretion or retention, it is not easy to credit; and it would be more difficult to prove. In every instance, where the urinary apparatus fails to discharge its accustomed duties, the energy and functions of the brain will be found to have been *previously* affected. The mind is either muddled and delirious, or torpid and insensible;

the external senses are either blunted and dull, or cease entirely to acknowledge their appropriate stimuli; deglutition is impaired, or gone; the sphincter of the rectum has lost its retentive power; the patient lies powerless and prostrate, with his head down off the pillow, and his feet drawn up in the bed, and his entire system is under the paralyzing influence of an oppressed, or exhausted sensorium. We do not remember an instance of retention, suppression, or incontinence of urine during fever, in which the cerebral functions were undisturbed; and we are ignorant of any case, in which either a deficiency, retention, or incontinence of urine *preceded* their disturbance. Derangement of the urinary organ is, therefore, *posterior to, and the effect of* derangement of the brain; and this rationale of the symptom is confirmed by dissection, when it frequently occurs, that water is found in *large quantities* upon the brain and within the ventricles, while *none lies within the bladder*, and, yet, in such cases no accumulation of urine has been permitted during life, and no difficulty has been experienced in passing it. The reverse of this is likewise no unusual occurrence, the bladder being found *full of urine, and no effusion within the head*. Moreover, admitting the fact, we would ask our author why the cavities of the brain are those *always* chosen by Nature, into which she may pour the retained fluid? Why do we not have other forms of dropsy, as hydrothorax, ascites, or anasarca? In ordinary cases of retained urine, from stricture or diseased prostate, we find no such partiality; on the contrary, we believe that ventricular effusion is a comparatively rare occurrence.

We have no experience of the state portrayed by the following sentence.

"Sometimes, as the adynamic fever is on the decline, there takes place watching, with a peculiar, staring, rather brilliant, and observant eye, and frequent lifting up of the head, as it were to listen, and mild delirium. The pulse is frequent, generally 120 in the minute; its stroke is rather open and vibrating, but is short, and leaves no impression on the finger; and the artery is very compressible. These signs must not be mistaken for irritation, or sub-acute inflammation of the brain: they occur in patients who have lost much blood; they are the result of that loss, and depend immediately on a defective arterial impulse, and defective supply of blood to the brain." P. 84.

Speaking of the causes which retard convalescence from fever or occasion a relapse, he furnishes us with these important observations:

"The re-establishment of the health of patients, after the adynamic fever has terminated, is, perhaps, more rapid and complete, under favourable circumstances, than after any other disease whatsoever. I have known a convalescent gain flesh after the rate of two pounds in three days, for three weeks successively. Under less favourable circumstances the period of convalescence is uncertain. At one time it may be early, at another protract,



ed, and is influenced by many causes, such as any unsound condition in which the body may be left, the quantity and quality of the food, the purity or impurity of the air from locality, or the ventilation of the room or ward in which is the convalescent. Whenever an organ has suffered much during the course of an adynamic fever, convalescence is very apt to be protracted, that organ requiring time to resume its healthy functions, or to adapt itself to the new circumstances which may arise out of its diseased condition. Thus, the functions of the brain may remain disturbed for weeks, or those of the lungs be imperfectly performed. Diet, also, influences the period of convalescence; for the weak and susceptible state of the stomach and bowels, together with an eager appetite, render it exceedingly difficult to arrive at health without frequent checks; every little indulgence or excess being immediately followed by general disorder. The continuing to breathe the impure air of a bad locality, or of a close room, or ill ventilated ward (surely these are all localities, and require not specification, after being preceded by a term so general) retards convalescence; and, from this cause, one sometimes sees patients quite at a stand-still, (we know of no variety of standing from that of *standing-still*; standing excludes motion) for many days; convalescents are extremely susceptible of cold, and consequent organic inflammation. I knew a young woman, who lost her life from rheumatic inflammation of the lining membrane of the heart, brought on by exposure to currents of air, and to a damp atmosphere; convalescents are always importunate to be allowed to sit up; but their request must not be readily acceded to." P. 90.

The diagnosis of fever is easy to an experienced observer, but, to those who have witnessed only a few cases, it is occasionally attended with considerable difficulty.

"There are only two affections," says our author, "with which the adynamic fever is likely to be confounded, namely, delirium tremens, and a febrile state which accompanies the latter stages of some diseases of the urinary organs, and there is so much similarity in the disordered condition of the nervous system in all these diseases, that I think it would not be difficult to show that they are only modifications of the same thing, produced by different causes. They may, nevertheless, be easily distinguished. Delirium tremens is known by the peculiar and excessive tremor of the muscles, from which its name is, in part, derived; by the very short and breathless respiration, caused by the tremor affecting the diaphragm; and, also, by the vacant, unsteady, and staring roll of the eye; by the constant and extreme agitation, and by the history of the patient's habits. The febrile state, which accompanies affections of the urinary organs, is at once distinguished by the presence of the local disease." P. 102.

There is a circumstance of some importance, however, which is overlooked by Dr. B. in his observation on diagnosis. The physi-

cian is not always called in at the commencement of the disease, and often cannot procure such information respecting its incipient symptoms as can be depended on; and, therefore, it is not a rare occurrence that, mistaking the effect for the cause, he pronounces his patient to be labouring under fever, while he is only labouring under the effects of some primary organic inflammation. In the last stages of pneumonia and bronchitis, we have seen symptoms developed, as similar to those of idiopathic fever as it was possible to conceive; and, believing, as we do, that organic inflammation is a much more frequent attendant upon, and consequence of fever than Dr. B. imagines, it is sometimes a task of difficulty to rank cause and effect in their natural relative position, in the absence of a satisfactory history of the case.

In treating of the pathology of fever, Dr. B. divides the morbid changes observable after death, into such as are proper, and such as are accidental, limiting his first class to those of the brain and fecal tube; and then gives directions by which we ought to be guided in conducting our post-mortem researches. They are so correct and important that we will not mutilate them by an extract.

"In all dissections, in which it is desirable to ascertain the exact condition of the vascular system of the brain, the examination should commence with the head; for, if the chest is inspected first, and, as is generally the case, the superior cava or the subclavian veins are divided, the gorged veins and sinuses of the brain will empty themselves through the jugulars into the chest, and so modify very much the appearance. Hence, it is common, under these circumstances, to find the larger veins of the pia mater empty and flaccid, while the smaller are gorged. This emptying of the veins of the pia mater, and of the sinuses, is very much brought about by the great pressure the brain sustains from the force employed to tear off the cranium; a force often sufficient to diminish the conjugate diameter of the brain one inch during the separation of the dura mater. The pressure from this forcible separation acts, in a degree, on the principle of an exhausting pump: it forces the blood out of the veins of the sinuses; and when the skull-cap is removed, and the pressure acts no longer, air will not unfrequently find its way through the divided vessels in the chest into the larger veins of the pia mater (?) to supply the place of the blood which has been forced out of them. On the same principle, air will sometimes get into one of the larger veins of the pia mater through a wound in the dura mater, the chest not having been opened." (This is, we think, the true rationale of the appearance of air in the vessels of the head in all cases.) "So great an influence has the division of the veins in the chest, in allowing the escape of blood from the venous system of the brain, that I have seen all the blood disgorged from the posterior part of the plexus choroides, leaving its vessel flaccid and empty, while the anterior part remained excessively



gorged; the evacuation of the posterior part of the plexus being favoured by gravitation, the body lying on its back, while gravitation opposed the disgoring of the anterior part of the plexus choroides, on account of its peculiar situation and inclination. The morbid appearances depend much on the period at which the dissection is made, and on the cause from which the patient (proximately, we presume, is meant) died; dissection, therefore, should be performed as soon after death as practicable. The bodies of adynamic fever patients seldom grow stiff after death, as the bodies of those who have died from other diseases. The excessive prostration of the muscular powers peculiar to this fever, prevents the last act of life, the contraction of all the muscles, taking place to the same degree as in other cases." P. 113.

In the head the most ordinary appearances are a sero-gelatinous effusion between the arachnoid and pia mater, opacity and thickening of the arachnoid membrane, (the opacity Dr. B. considers as partly the effect of inflammation, and partly the result of maceration in the fluid lying between it and the pia; but it can only be in such bodies as have been inspected long after death, that we can ascribe much to this latter cause) turgidity of the larger veins and sinuses, except when the serosity is copious,—vascularity of the brain, displayed by making transverse incisions through its substance, when numerous bleeding puncta will appear,—turgescence of the plexus choroides, (this vascular tissue is very seldom highly injected, and never when there is much water within the ventricle) and a variable increase of serum in the ventricles. In some cases the arachnoid is rendered thick by an adventitious deposit, and the fluid beneath it is semi-opaque; but he has never seen fibrine effused between the membranes, and although the brain is generally firmer than natural, when the arachnoid is thickened, in common cases it is of the ordinary consistence.

"When a patient dies from the urgency of the adynamic fever itself, there will be invariably found a greater or less effusion under the arachnoid, with a corresponding one in the ventricles, never exceeding about three drachms. When, therefore, a much larger quantity is discovered in the ventricles, it may be concluded, that it arises from some other cause than the fever, even though there be effusion under the arachnoid: and, if there is this greater effusion in the ventricles without any effusion under the arachnoid, and an effusion under the arachnoid is invariably found in cases fatal from the urgency of the fever, it follows, that death, as also the ventricular effusion, has been produced by some other cause than the fever, which cause may justly be concluded to be a retention or suppression of urine; seeing that, in every case of copious ventricular effusion, death has been preceded by one or other of these affections of the urinary organs." P. 121.

The sentiments contained in this passage we dissent from *in toto*, and we caution the inexperienced from adopting them without

very mature deliberation. In many cases of the *purest adynamic fever* (and the observations now advanced are the result of multiplied experience) we have found water under the arachnoid *without any effusion* into the ventricles, and, when effusion co-existed with the sub-arachnoid deposit, we have found the quantity to vary from 3ss. to 3iv. or more; and, that this plus-quantity of ventricular fluid could not have been the product of suppressed or retained urine is rendered indisputable by the *fact*, that, in many instances, there was *no derangement of the urinary organs*. It is incorrect, therefore, to assert, in terms so unqualified, that, whenever the case proves fatal, through the malignancy of the fever itself, both ventricular and sub-arachnoid effusion will be found, and that the amount of the former will never exceed 3ijj. Besides, admitting that this increased quantity of serum arose from a diminished quantity of urine; will any one be disposed to believe with Dr. B. that death, as well as this ventricular effusion, has been produced by either a retention or suppression of urine? This is certainly "riding a hobby too far." We are not among the number of those, who can find the cause of death *in any case of fever*, an effusion within the head. Such a phenomenon only ranks with us as one termination of a preceding action, to which we ascribe much more importance; and we hold it to be a confounding of causes with effect, and our error not confined to our pathology, but extending to our therapeutics, to maintain, that a non-secretion or retention of urine, arising from a palsied condition of the kidneys or bladder, which condition itself arises from a prior derangement of the brain, can, in any case of fever, be the cause of dissolution. Were Dr. B.'s views correct, very few, indeed, are destroyed immediately by fever. The profession have hitherto nearly overlooked a point involving the most important consequences, and the value of the catheter has not been sufficiently appreciated in its treatment.

Passing over our author's morbid anatomy of the abdomen, which we will refer to in our review of the next article,\* we are informed that the bronchial lining is, in general, preternaturally vascular, and has often adhering to it much inspissated mucus, which the patient has not had strength to expectorate. This mucus is sometimes mixed with blood, and sometimes with pus, when the mucous membrane is found thickened and soft, as well as vascular (and may be easily abraded by the nail,)—the lungs are, in general, too heavy, and do not completely collapse, their natural structure is not, however, necessarily altered, their inferior and most depending portions are gorged with blood, and are either of a livid or purple colour;—sometimes large portions of them are hepatized and irrespirable, at others, circumscribed livid patches, resembling the spleen in structure, will be discovered in the middle of

\* Review of Dr. Bright's work, which we have been obliged to defer till the next Number.—Ed.



their substance, and which are considered to have been formed by the effusion of blood before death. The heart is often relaxed and soft, and, in one case, where the symptoms resembled those of delirium tremens, it was found pale, flabby, and easily torn. The inner surface of the aorta will, on some occasions, be seen "of a dark scarlet colour, which may be attributed to staining from the presence of blood in the vessel." The same appearance we have often met in the interior of the heart, especially in its valves and the mouths of the large vessels. P. 139.

Before leaving this department of the subject we wish to observe, that Dr. B. constructs his rationale of the morbid anatomy of fever upon one and the same principle, "debility." If effusion exist within the head it is in consequence of impaired nervous energy; or, if the brain be turgid with blood, it is because its vessels are labouring under a congestion, from deficiency of power to carry forward their contents. If the intestines be found tympanitic, and their mucous tissue inflamed or ulcerated, it is because their muscular powers being prostrated, and their peristaltic action weaker in effect, that their accumulating and putrefying contents extricate thin gases, and irritate the canal to inflammation and disease; or, if the chest betray effects of disorder, whether they be injection or thickening of the bronchial lining, engorgement or consolidation of the lungs, they result, either from inability to expectorate the ordinary secretion, which becomes viscid when retained and irritates the mucous membrane to inflammatory action, or from a dissolved condition of the blood, which, assisted by gravitation and enfeebled respiration, loads the parenchyma of the lungs to a degree incompatible with life.

This principle (debility) is, therefore, one of great use and applicability with our author; but, while such illustrations of symptoms and disease establish his consistency in adopting the epithet *adynamic*, we question very much, whether their simplicity is a sufficient test of their correctness, or their consistency with the title a satisfactory guarantee of their fidelity to nature. We are strongly inclined to suspect, that effects are sometimes mistaken for causes, and it were as difficult to convince us, that it is viscid mucus which inflames the bronchia, and putrid fæces which ulcerate the intestines, as it were to persuade us that it was the pus expectorated which generated tubercles, or that mucous stools were the cause of diarrhœa.

In another part he observes, that—

"The atonic character of inflammation accompanying the adynamic fever is, moreover, shown in the products of that inflammation, all of which are nearly destitute of fibrine, the characteristic of tonic or *healthy inflammation*. Where the serous membranes are the seat of inflammation, the effusion, instead of being fibrine, is sero-purulent, with merely shreds or flakes of albumen floating in it; so that there are either no adhesions between these membranes, or the adhesions are partial and

slight. Where the mucous membranes are the seat, the product is merely mucus, and seldom or never mucus combined with pus. Where the inflammation is in the parenchyma of any organ, as of the lungs, constituting pneumonia typhodes, the consolidation is in a degree trifling compared with ordinary cases of pneumonic inflammation." P. 42.

Now we can safely assert, that we have seen as active signs of inflammation during life, and as varied results of inflammation after death, in cases of fever, as in any individuals of the order phlegmasiæ. We have seen the pleuræ adhering, nay incorporated as it were; the parenchyma of the lungs fleshy, firm, and irrespirable; the surface of the heart studded with white specks of coagulated lymph; flakes of fibrine floating both in the pleural cavities, and that of the pericardium; the intestines agglutinated so firmly that they were torn by effecting a separation, and several other of the abdominal viscera, as the liver to the diaphragm, the omentum to the spleen, and the fundus of the bladder to the ileum, united by adventitious attachment. Then as to inflammation of the mucous membrane, we have witnessed cases, during which many pints of nearly unmixed pus were expectorated. One we may specify. A woman, of middle age, was seized with the ordinary symptoms of continued fever; but the cavity mainly affected was the chest. She first had a teasing cough, accompanied with mucous sputa; her breathing was hurried, her cheeks gradually became dusky, and then of a leaden hue in the centre; and her dyspnœa increased, and she began to expectorate large quantities of almost pure pus. The purulent expectoration became, at last, so copious, that confirmed consumption was apprehended, and it was only the stethoscope which rectified our diagnosis. She died, and upon dissection, ulceration of the bowels, inflammation, thickening and softening of the mucous membrane of the air tubes, without any change of parenchymatous structure, were discovered.

After controverting, in a very ingenious and able manner, the doctrines of Clutterbuck and Broussais, and arguing for the general or systematic nature of fever, the following propositions are laid down:—

"That the adynamic fever has no local seat: that its nature is a morbid condition of the blood, produced by the operation of the primary cause, the respiration of a contaminated or poisoned atmosphere: that the morbid blood, acting on the brain and nervous system, is, of itself sufficient in very many instances, to bring about the very great derangement and imperfect performance of all the functions of the organic and of the animal life; which great derangement and imperfect performance of all the functions constitute the phenomena of the adynamic fever." P. 161.

The first proposition we deem incontrovertible by those who have had an extensive experience of fever, and whose minds have neither been warped by theory, nor forestalled by prejudice. The opinions of Broussais, al-



though followed almost exclusively in France, are quite heterodox and untenable; and, although those of Clutterbuck are more plausible in theory, and more countenanced in practice, they are neither established by symptoms, nor can they explain appearances. But while we concur with our author in rejecting the doctrines of the Localists, as unnatural in not accounting for appearances, as illogical in ranking effects into causes, and as unpractical in fixing the eye of the practitioner upon one symptom and one organ, while it ought to comprehend within its glance every symptom and every organ; we have not yet determined on adopting his view of the disease, though recommended by its antiquity and the probabilities attending it. In reviving the humoral pathology of fever, Dr. B. ought to have called in the aid of chemistry, as the surest, if not the only means of establishing his doctrine. For, although every symptom and phenomenon receive a satisfactory explanation, by supposing the blood to be diseased, without a confirmation of this supposition, by an analysis of that fluid at the onset and during the progress of fever, such a view could only be regarded as an hypothesis. Had it been proved, that the blood of a fever-patient differs, in its internal constitution and external character, from that of a healthy person,—that this difference is discoverable prior to any other palpable febrile symptom,—that the symptoms proceed in intensity, "*pari passu*," with this alteration, and that the fever disappears with the disappearance of this difference,—Dr. B. would have had a strong claim upon the faith of his readers, a claim not to be resisted; but, when no such, and, indeed, no analysis is furnished, when the only observation, made upon the chemistry of febrile blood in the entire volume, disagrees with the results of those who have examined it,\* and when we believe, that all the phenomena of fever might be otherwise accounted for, we must for the present, at least, withhold our assent. That the external character of the blood, during the *advanced stages* of this disease, is changed, there is no doubt; and, that a diseased state of this fluid might and would produce *symptoms of fever*, we feel no scruple in believing; but, that fever is *in all cases* produced by such an alteration, and that such an alteration exists *before* every other febrile phenomenon, we have several reasons for doubting. At the commencement of the excitement, when the lancet is generally employed, the blood drawn does not differ very materially from that taken out of a healthy system, or one affected by organic inflammation. It separates freely into its constituent parts, and presents frequently, we might say generally, an inflamed surface; but, it is principally as the fever advances, as the whole body becomes more relaxed and

disposed to putridity, and as the energies of the nervous system sink, that this fluid assumes a loose, dissolved, and peculiar aspect.

But, having already devoted much space to this review, we must *at present*, abstain from dilating on a subject involved in so much darkness, and which yet requires the most patient and minute investigation, and follow our author to what is equally interesting and not less useful, the treatment of the adynamic fever.

"The treatment of the adynamic fever resolves itself into four principal objects: namely, to arrest the progress of its development; to cure the disease when fully established; to subdue any organic inflammation which may accompany it; to conduct the patient from convalescence to health.

"And, the means by which these objects are to be accomplished, are emetics, aperients, bark, cold-affusion, ventilation, febrifuges, blood-letting, mercury, hyosciamus and opium, stimulants and regimen." P. 166.

"Emetics," he observes, "*are never required*, except when the attack was without the intervention of an accidental cause." P. 166. Now, we really see no good reason for such an exclusive dictum respecting this class of medicines; and, were we friendly to such sweeping generalities, we would have no hesitation in preferring one which conveyed a sentiment the reverse of that contained in this extract. When the fever creeps slowly over the constitution, and gradually takes possession of every organ and function, we believe that neither emetics nor blood-letting will make much, if any impression upon the progress, or character of the disease. In such cases mischief has been imperceptibly accumulating, the functions of life are slowly but surely undermined, indifference gives way to languor, languor to prostration, and prostration to pain. The poison is insinuated, unfelt and by degrees, into the fountain of life; and it is not until its stream be thickly charged, that the unwary patient perceives his preceding disorder was only the commencement of disease. The enemy has gained too firm a grasp of his victim to be surprised and vanquished by a single stroke, and, although an emetic may be occasionally necessary, it will be seldom found to ameliorate the symptoms, or abridge the attack. Not so, however, in cases arising from cold, disordered stomach and bowels, or other accidental causes. The boundaries between health and sickness are here well defined; the moment when the poison began to operate is easily ascertained, and the patient is not surprised into fever by the stealthy mode in which he has been involved. Under such circumstances, if an emetic be *early* employed, it will often arrest the progress of disease, or impart to it a mild and gentle type. We cannot, therefore, sanction the following passage,—when the fever attacks through the intervention of an exciting cause.—

"The development is so sudden, as not to allow the practitioner an opportunity of attempting to arrest it. The development of the fever, therefore, from an accidental cause

\* "Blood drawn while the adynamic fever is urgent, is surcharged with carbon;" p. 142. According to Dr. Sunderland, there is no free carbonic acid in typhous blood. The latter grounds his opinion on his own experiments.



cannot be prevented. But, it is far otherwise, when the way of attack is spontaneous, and the development slow and progressive; and if the aid of the practitioner is sought during this period, it will, in very many instances, stifle the fever in its birth, and save the patient from a long and serious illness." P. 200.

A certain time is necessary to habituate the system to a morbid change, and if any thing be done before the formation of this habit, which will impart a sudden and forcible shock, the tendency to disease is frequently destroyed, the chain of morbid action broken, and a new and healthy impulse given to the powers of life. Now, an emetic, or blood-letting, well-timed, acts as alteratives, we believe, in some such way; and, having seen many cases prevented and others shortened by such treatment, we consider it necessary to hold forth our veto against a sentiment, in itself, too exclusive, and which, when practically acted on, is calculated to deceive.

Speaking of aperients, he observes, that—

"The best are rhubarb, castor oil, and senna, combined with manna. The dose always to be moderate; that of rhubarb varying from five to fifteen grains; of castor oil, from one drachm to half an ounce; of infusion of senna, from one drachm to an ounce, with a proportionate quantity of manna. The larger of these doses are (is) to be prescribed only at the commencement of the disease; and, as a general rule, the longer the disease has existed, the less is the dose required. Although these aperients are all eligible, I have found rhubarb the most so; and so effectually does it answer the purpose, in all states and stages of the disease, that I do not hesitate to recommend its use, to the almost entire exclusion of the castor oil and of the senna." P. 167.

The following passage, we acknowledge, startled us:—

"*Bark is as serviceable in arresting the formation of the adynamic fever, as it is in arresting the progress of an ague; and it may be most advantageously employed when the disease has been for some time on the decline, and distinct remissions occur; and, also, during the early stages of convalescence, particularly in hospital patients, who have always to contend more or less, with an impure air.*" P. 170.

We have already quoted a passage which informs us, that the development of fever from an accidental cause cannot be prevented by any mode of treatment; and, in this extract, we are taught that bark is as effectual in preventing the formation of an adynamic, as it is in curing an intermittent fever; consequently, admitting that one-third of all our cases of continued fever arise from accidental causes, (we use the word *accidental*, of course, in the author's own meaning,) the bark must be supposed to fail in curing one-third of all the cases of ague in which it is tried. Whereas the fact is, that, with some obstinate exceptions, the sulphate of quinine will arrest the progress of ague, as certainly as mercury will arrest the progress of syphilis. This conclusion, however, although drawn from his own premises, we do

not imagine he will defend, and, therefore, upon it we will insist no further; but, if bark can cure continued fever as infallibly as intermittent, why is the mortality of typhus so sadly disproportioned to that of ague? There is some obscurity in the structure of this passage, and, therefore, we may be misinterpreting the author. We cannot see how a disease can be *arrested before it is formed*; its *formation* may be *prevented* and its *progress arrested*; yet, supposing the Dr. intended to convey this meaning, how can he add in the next clause that the bark "may be most advantageously employed when the disease has been for some time on the decline?" Surely, if the formation of the disease can be prevented, or even its progress arrested by bark, it would be most advantageously employed at its commencement, and not at its decline. If we can cut short, or prevent typhus, by the use of this medicine, as certainly as we can cut short or prevent a fit of the ague, why allow it to pursue its wonted course; why expose the patient to the pains and hazards of a protracted illness? and why administer at the close, in preference to the outset of the fever, a drug endowed with such therapeutic power? This is, at least, to trifle with sickness and to toy with death.

We attach no such value to bark in the treatment of *continued* fever. It is only when remissions are observable, that it can be employed with any propriety or prospect of success in the *early* stages; if exhibited during the period of excitement, when the skin is hot, the face flushed, the head disordered, the heart labouring, and all the functions disturbed, it will certainly do harm. But, if used in the decline or during convalescence, when the "heat of the battle" is over, and Nature, exhausted by the struggle, only requires strength to "gain the day," we then agree with our author in strongly recommending it, as, perhaps, the most effectual restorative we can have recourse to.

The undeserved neglect which cold affusion has lately suffered, renders the following judicious remarks peculiarly valuable.

"At any period during the course of the adynamic fever, and in all cases which are not accompanied with local inflammation, cold affusion may be advantageously employed, whenever there is a burning heat of the whole surface of the body; and, particularly, where the skin is very dry, harsh, and contracted, and the prostration of strength great. It diminishes the heat of the surface, saves the strength, disposes the skin to perspiration, and the patient to sleep. I have known delirium cease for several hours after the use of the cold affusion. When the preternatural temperature of the skin is only partial, affusion would be prejudicial; but ablution would be grateful and serviceable; and the hot surface may be sponged with vinegar and water frequently in the course of the day." 173.

We are sorry, after such sentiments, to find that cold lotions to the head are disapproved of.

"The utility of evaporating lotions is, in-



deed, very questionable, either in these or in more violent cases. I have never seen any decided benefit from them; and they often give cold, and excite a languid inflammation of the eyes, with puriform discharge; and excite or increase pulmonary catarrh." 209.

Perhaps, in one case out of a hundred, the consequences here stated may be produced by such applications, but we have not had experience of them even to that amount; and we are inclined to believe, that, when they do occur, they are not to be attributed to the use, but to the abuse of the remedy. If cold be applied *only* when the temperature of the head is *above* that of the body, (and it is in such cases only that it will do good,) we are convinced that it will seldom or ever cause any disagreeable result. Evaporation will abstract the excess of heat and not sink the natural temperature, unless too long applied; but if used when the scalp is not warmer than the rest of the surface, the evaporation will, probably, do more essential mischief by lowering the energy of the brain, than occasion such local inflammation. The consequences, then, are to be ascribed not to the application, but to the practitioner. Exposing the head to a cold atmosphere, after shaving the scalp, will often remove severe headach; and increasing the cold by the application of evaporating lotions, or an ice-cap, will frequently remove symptoms the most dangerous and distressing, without the aid of other treatment.

His views of ventilation are equally just and important.

"I have seen, over and over again, patients begin to improve, without the aid of medicine, the moment they have escaped the foul atmosphere of their own dwellings. And this is not to be wondered at, on the belief that the adynamic fever results from a certain condition of the blood, produced by the continued breathing a contaminated or poisoned atmosphere; for then the legitimate inference is, that the unhealthy condition being no longer kept up, but, on the contrary, diminished by the substitution of a pure for an impure air, the effects of that unhealthy condition diminish also, and thus the adynamic signs subside. The impracticability of good ventilation is the reason why it is difficult to cure the poor at their own home; where a whole family, perhaps, is cooped up in a small room filled with dirty, musty furniture, and in which all their little domestic operations are carried on. The adynamic fever, under these circumstances, is always protracted; the efforts of the physician are baffled, and all the remedies which he can administer are barely sufficient to prevent the patient losing ground; much less to conduct him to a safe and speedy convalescence. These are truths which plead in favour of those noble institutions, hospitals, and declare how necessary they are to the very salvation of the poor afflicted with the adynamic fever." 175.

We embrace this opportunity of observing that, although fever is a most prevalent and destructive disease in London, owing to its crowded population, the filthy state of many

of its districts, and the wretched habits of its poor; and, although there is *only one hospital* appropriated to fever patients, the support it receives is very limited, and its annual income insufficient to cover expenditure the most reasonable. When we consider the contagious nature of this disease, the ravages which it makes when it enters a family, and the difficulty that is encountered in circumscribing its influence, we cannot help being astonished that an enlightened public can so long overlook the merits of an establishment, to which the lord is equally indebted with the peasant, and which lays claim to a liberal support, as well from the judicious and efficient mode of its management, as from the amount of good which it effects with means so limited.

Had our author confined himself to one form of fever, and had that form been significantly expressed by the term *adynamic*, his remarks upon the treatment in general, and on blood-letting in particular, would have, in our apprehension, been appropriate. But, when we consider that under this epithet he groups every form and degree of this disease, we regard his practice throughout as timorous, and his recommendation of the lancet calculated to discountenance its use. After a few cautious observations in its favour, he winds up the subject by remarking, that "I regret to say, the information, which I have been able to obtain on this point, leads me to the melancholy belief, that, within the last few years, adynamic fever patients have sustained more injury than benefit from the abstraction of blood." 186.

We cannot determine how Dr. B. has arrived at this conclusion, because we have no knowledge of the cases from which it is drawn; but we can safely and certainly aver, that our experience has led us to a very opposite conclusion. We have no doubt but, that during some epidemics, when the type of the disease is characterized by debility, and, in some constitutions, depressed by misery, worn out by nature, or exhausted by fatigue, that the abstraction of blood must either be very limited, or entirely abstained from. But we are not aware that our author makes the above remarks with such peculiarities in view. His language is general and unrestricted, and as such we oppose the doctrine it conveys. Fever, in the abstract, as it has lately appeared and now exists, is not an adynamic affection, although it may become so by the peculiarities of the subject it invades, or of the circumstances attending its attack. Whenever it is seen in the low and *adynamic* type, it is seen modified by some contingent cause, and, therefore, a corresponding modification of treatment will be necessary. But such cases are exceptions to a general rule, variation from the natural portrait; and, although it may be safe and prudent to arrange them into one class, to designate them by a specific title, and to prescribe for them a certain plan of treatment, it is imprudent and unsafe to confuse the exception with the rule, the variation with the standard, and subject a whole genus of



disease to curative means only adapted to a species. At the commencement, and during the first stages of fever, blood may, in general, be safely and successfully drawn, apportioning the quantity to the power of the pulse, and the inveteracy of the other symptoms; and we fear that he, who will seal up his lancet-case, and feed his patient upon bark at the outset, will ere long have, at least, as many facts from which to draw a different conclusion, as Dr. B. can advance in support of the one we have extracted.

Our author is opposed to the internal use of mercury, believing it to irritate the mucous membrane of the alimentary canal, and thus dispose to or accelerate ulceration; but, while he prefers rhubarb alone, he admits that there are some instances in which it may be had recourse to with advantage, and strongly recommends its employment externally. As we concur entirely with his views on this point, we shall beg leave to give his sentiments in his own language.

"One of the characteristic conditions of the adynamic fever most difficult to combat, and most desirable to relieve, is the diminution or suspension of the secretions; and the power of the mercurial frictions to restore the secretions exceeds all other remedies, and is, indeed, very remarkable. I have witnessed such speedy convalescence from the operation of mercurial friction, that my mind is quite made up, as to the propriety and utility of this remedy. I believe it may be advantageously employed in all urgent cases of the adynamic fever; and, particularly, when the brain is much affected; as, where there is oppression or lethargy from fulness of blood about the head; where there is restlessness and noisy delirium; or, where inflammatory action is going on; and, indeed, in all cases, and at all times, when the return of the secretion is obstinately protracted. It has quite astonished me, on some occasions, to see how quickly the tongue will cast off its dry brown or black thick coating, the lips and teeth become moist, and the skin soft, and the brain resume its natural functions. Mercurial friction has produced more rapid and favourable changes in very severe cases of the adynamic fever, than any other remedy I have ever seen administered. The average quantity to be rubbed in is half a drachm of the ung. hyd. fort. twice a day." 192.

There is no point connected with the treatment of fever, which is involved in so much obscurity, and requires more judgment and experience, than the use of sedatives and stimuli; and we are not acquainted with one general rule by which to be guided in their administration. We have seen opiates exhibited in cases apparently the most favourable, where constant tremor, jactitation, and watching evinced much nervous irritation, but without any good, and, frequently, with a bad effect; and it has not seldom occurred, that we have witnessed their beneficial operation in instances where the untutored observer would have, *a priori*, denounced them as misapplied

and injurious. The same remark is equally applicable to the use of stimuli in the last stages of fever, and we would recommend the greatest caution in the employment of all such medicines, believing that they invariably do harm, if they fail producing the effect for which they were intended. In cases which seem to require them, they should be at first given in very small doses, increasing, diminishing, or entirely withholding them, according to the nature and amount of the effect produced; as, we are convinced, that the most experienced can seldom tell before-hand whether, by their employment, he is going to relieve his patient, or aggravate his symptoms.

With such views of these medicines we cannot adopt the following rules, that—

"When there is noisy delirium, wakefulness, and restlessness, with an accelerated and easily compressible pulse, hyosciamus or opium may be given, *whatever be the state of the other symptoms*, and will be found valuable remedies. When the adynamic fever has been unusually protracted, and the patient is much exhausted and emaciated, a small allowance of wine, as four ounces, will be serviceable, and accelerate convalescence." 193—196.

In some protracted cases wine may be and is useful, but we object to every thing in the shape of a general rule or principle upon a subject of such obscurity; and, still, of course, excepting peculiar cases and epidemics, we believe it will be found that he who knows most of the nature of fever, and has acquired the *tact* of treating it most successfully, will use the least wine and opium, and, when he does have recourse to them, will use them "with fear and trembling." In the language of our author, "*nomine mutato*, and if he is in doubt, let the doubt be opposed to the free administration of stimuli." P. 204.

We have now laid before our readers a tolerably minute account of the Doctor's leading views, as to the nature and treatment of fever; and having done so, it is not our intention to follow him through the minutiae of his practice, as we cannot, by such details, present either much novelty or information. His individual remedies we have individually considered, and the pages which follow he exclusively devotes in applying them to symptoms as they rise, in accordance with the doctrines already reviewed.

We, therefore, dismiss this very unique and ingenious performance with the belief, that the points, in which we differ, arise chiefly from the restricted views our author takes of the nature of fever, and, that could we adopt the doctrine of fever being "*in natura et semper*" *adynamic*, we could subscribe to many of the sentiments which we have considered it our duty to oppose. But, differing from him, as we do, on this fundamental point, and believing, as we must, from the facts we have seen, and the observations we have made, that fever presents as many varieties of symptoms as there are varieties of causes, constitutions, and circumstances, and that it may appear under every grade of inveteracy, from the most



putrid type, where life is seen sinking in a mass of rottenness, up to the most intense phlogistic character, where the lancet must be handled and handled freely; we have been compelled to impugn many positions that were perfectly consistent with the author's leading doctrine. Fever must not only be seen to be described, but it must be seen under every changing form which changing circumstances can attach to it. In one epidemic its prominent feature its debility, in another it is strength. In one, enteric symptoms will be found to predominate, in another, disorder of the head. In one constitution every important organ will successively feel the influence of its power, in another, it distributes its excitement in equal proportion throughout the body, passing along its stages without characterizing its attacks or stopping its progress, by any local affection, or leading symptom.

All these varieties must be seen and studied, and every modification of feature must be marked and noted, before we can, either with safety or success, sit down to delineate a faithful portrait. Had Dr. Burne confined himself to a certain epidemic, or to a certain combination of febrile phenomena entitled to the epithet he employs, his work had not occasionally sacrificed its fidelity to Nature for the sake of consistence, and the claims which it certainly has upon public patronage, had not been deteriorated by a comparison of the limited applicability of the principles it inculcates with the extensive magnitude of the subject which it treats.

From the *Lancet*.

**AN ACCOUNT OF ANEURISMS FOLLOWING ARTERIOTOMY.** By GEORGE BUSHE, M. D. of the Royal College of Surgeons in Ireland, and Assistant Surgeon of the Forces.

In this communication, it is my object to describe the different species of aneurism which I have observed to follow arteriotomy; and, I purpose to illustrate the same with appropriate cases. The undertaking, it is hoped, will not prove unprofitable, since the subject has not yet met with that attention which it so justly merits; however, it may be necessary to apprise some of my readers, that M. Desruelles has lately written on this subject, in the *Transactions of the Medical Society of Emulation at Paris*; but his paper, though it contains much useful matter, can in no way detract from the advantages that may accrue from the publication of the following pages; for the reader will soon learn that I have described forms of the disease untouched by him, and illustrated the same with instructive cases; therefore, without further prefatory remarks, I shall lay before the public what information I possess on this subject.

In the second volume of Sir A. Cooper's *Lectures*, it is written, "I have seen several cases of temporal aneurisms from arteriotomy in that vessel, one in Mr. Heuslegh, a me-

dical student. I opened the sac, secured the temporal artery at its lower part, and was there obliged to secure many others entering the circumference of the sac, which had been excessively dilated." No doubt this case, in the language of Mr. J. Bell, was an anastomosing aneurism; and one, in all probability, produced by the operation of arteriotomy.

Again, if the reader will look to Mr. A. Burns' work on the head and neck, page 342, he will observe a case in which the temporal artery was opened for an apoplectic affection, to which succeeded an aneurism by anastomosis, and which Mr. Burns believed existed beneath the temporal fascia before arteriotomy was performed, and was the cause of the cephalic symptoms. It is with great deference that I would oppose such high authority as Mr. Burns, but from the extract I have made from Sir A. Cooper's work, together with the following cases, I am led to suppose, that aneurism from anastomosis is not a very uncommon sequel of partial or total section of the temporal artery, and that, in all likelihood, Mr. Burns erred when he gave it as his opinion, that the aneurism existed beneath the temporal fascia before the performance of arteriotomy; and that the true nature of the disease only became manifest after the division of the membrane.

*Case 1.*—On the 30th of April, 1826, G. Graham, private in the 54th regiment, was admitted into Fort Pitt General Hospital, in consequence of concussion of the brain, produced by a fall, sustained a few hours previously, when intoxicated. In the second stage of the disease, (as mentioned by Mr. Abernethy,) blood was taken from his right temporal artery, but no bandage was subsequently employed, as its application produced an increase of headach and general fever. The wound in the temple did not unite, and a pulsating tumour gradually formed, which, from the 18th to the 22d of May, bled frequently and profusely, though firm pressure was steadily applied; indeed, the tumour appeared to extend rapidly under this treatment. On the latter date a vertical section was made of the aneurism, and pressure reapplied; but, much to my annoyance, the progress of the disease appeared to be increased by the means adopted, and on the 26th, in consultation with Dr. Skey, deputy inspector of hospitals, and Mr. Millar, surgeon to the forces, it was determined to secure the trunk of the vessel near the root of the ear; this was accordingly executed; but we were again disappointed to find, that the steps adopted were totally ineffectual, as neither the growth of the aneurism, nor the hæmorrhage from it, were suspended; the exterior of the swelling on the 15th of June, being about the size of a hen's egg, ulcerated in the centre, fungated more externally, and its circumference, where the skin was entire, it possessed a purple colour, irregular surface, and œdematous feel; the whole mass being simultaneously moved with the contractions of the left side of the heart;



moreover his countenance was pallid, and his frame debilitated and emaciated from the protracted stage of suffering, and repeated hemorrhages. A consultation was held, and the removal of the diseased mass recommended. Assisted by Dr. Skey, I proceeded as follows:—

Pressure being made on the carotid artery, an elliptical incision was carried round the base of the tumour, and its removal completed by dissecting from above downwards. In prosecuting this part of the operation, the knife had to be carried freely into the body of the temporal muscle, in consequence of the aneurism being lodged in it, particularly at its lower part behind the zygoma. But little blood was lost during the operation; but when the pressure was removed from the carotid, several large branches sprang in the body of the temporal muscle, one of which was secured by ligature, but the others being numerous and deep seated, the application of sponge and graduated pressure were employed to restrain the bleeding. On the third day the wound was dressed, after which it soon granulated, and rapidly healed. The morbid parts corresponded to the structure which Mr. J. Bell describes as peculiar to aneurism from anastomosis.

*Case 2.*—In June, 1826, — Salmon, publican, in Fort Pitt Barracks, had an apoplectic fit, for which he was blooded from the left temple, by assistant-surgeon Ford, to which, in the course of fourteen days, succeeded an aneurismal tumour, about the size of a filbert; the wound in the temple never having healed, it bled freely and repeatedly, was of a purple colour, and attended with the peculiar doughy feel so remarkable in Graham's case; pressure was applied, but Mr. Ford informed me, that it had most manifestly exasperated the disease. I removed the tumour (which lay above the temporal fascia) without difficulty, but to restrain the hemorrhage, I found it necessary to apply two ligatures, and fill the wound with sponge. The excised parts resembled those removed from Graham's temple.

*Case 3.*—In Jan. 1827, Captain M., of the 3d regt. of foot, was affected with inflammation of the iris of his right eye, for which the temporal artery was opened, but as he stated that the pain of his head was increased by the bandage, after a few hours its application was discontinued; the wound did not heal, and an aneurism formed, which at the end of eight days, had acquired the size of a hazel nut; pressure was applied, but repeated attacks of hemorrhage ensued, and the tumour, on the thirteenth day, was as large as the segment of a walnut. An incision was then made around its base, so as to divide the superficial vessels passing into it; and, after three trunks were secured, the pressure was reapplied; but this expedient did not answer, for, on the eighteenth day, the aneurism being rather larger than that of Graham's, its removal appeared imperative. Assisted by Mr. Fryer, assistant surgeon, 46th regt., I accomplished the desired object, which was rendered very difficult in consequence of the number of vessels en-

tering its base, and the depth at which it lay beneath the zygoma, in the substance of the temporal muscle. The bleeding vessels were so numerous, that to apply ligatures to them, at such a depth from the surface, in a narrow cavity, appeared impossible, therefore by plugging the wound with sponge, the hemorrhage was restrained; a healthy wound followed, and in a fortnight it had skinned over. This aneurism I injected and corroded, by which means its true structure was clearly exposed.

I have now mentioned three cases, in which anastomosing aneurisms followed the operation for arteriotomy, and from them may be deduced much useful matter. In the section of Sir A. Cooper's lectures before alluded to, it is stated,—"Aneurisms are to be prevented after arteriotomy, by the complete division of the vessel." This opinion being derived from such high authority, carries with it much weight, therefore it is with great deference that I would oppose it; but in two of the above cases the vessel was cut across, after the desired quantity of blood had been abstracted, viz. in those of Graham and Captain M. Hence, I am firmly convinced, that the means recommended by Sir A. Cooper will not prevent the formation of anastomosing aneurism, notwithstanding it will, undoubtedly, that of a species hereafter to be mentioned, viz. that of the trunk itself. I cannot comprehend how a complete division of the vessel could possibly operate against the development of a structure, consisting of a dilatation of the anastomosing vessels, though it is easy to understand the rationale of its operation, in the prevention of false aneurism of the temporal artery; and, moreover, I am convinced, that in the most careful attempts that can be made to complete the section of the vessel, the temporal fascia will be divided, by which a communication is opened between the superficial and deep seated vessels, an event that tends to increase the malady, and render the removal of the diseased parts much more difficult. In exemplification of this contrast the depth at which the aneurisms of Graham and Captain M. lay in the body of the temporal muscle behind the zygoma, and the supply of blood they received from the deep temporal arteries, with the superficial situation of the aneurism of Salmon, viz. external to the temporal fascia; the facility with which it was removed and the hemorrhage restrained, the deep temporal arteries being free from disease. From these facts, I cannot withhold recommending a discontinuance of the common practice of cutting across the vessel, when a sufficient quantity of blood has been abstracted; for though such a proceeding will prevent the formation of aneurism in the trunk of the vessel, still, if there is a disposition to the formation of anastomosing disease, it will, in my mind, increase it, and the establishment of dilatation of the trunk itself can be prevented by the application of pressure. In the cases of Graham and Captain M., pressure was not employed after the operation of arteriotomy; but in Salmon's case, it was applied in the usual way, still it did not prevent



the formation of anastomosing disease; therefore I am disposed to conclude, that in some individuals, there is, from causes yet unknown, a disposition to this peculiar morbid action which is called into existence, no matter how completely the vessel is divided, or how accurately pressure is employed.

In the three cases related after the appearance of the disease in the anastomosing vessels, pressure was applied, and in all it appeared to expedite the growth of the tumours, increase the central ulceration, and finally to produce much constitutional annoyance.—These effects I have observed to follow pressure when applied to anastomosing aneurisms of spontaneous origin; and the same results have been pretty strongly hinted at by John Bell, and some other authors. Therefore I would recommend, that as soon as the disease becomes manifest, pressure should be immediately discontinued.

In the case of Captain M., a circular incision was made around the base of the tumour, as recommended by Sir Astley Cooper, and afterwards firm pressure was applied; but I did not carry the incision to the bone as proposed by Sir Astley, as in the case alluded to by him, the aneurism was situated on the forehead, where he had not to contend with deep seated vessels, situated in a thick muscle. The result of the attempt in the case treated by me, the reader will recollect, proved abortive; but the failure can easily be explained in this way: by the incision, the superficial, temporal, and frontal arteries, were only divided; and the aneurism having its supply of blood principally from the deep temporal arteries, its growth continued, because they were left undivided, hence I shall not again adopt this proceeding. But it may be asked, if the incision was carried through the body of the muscle down to the bone, would it then not have answered? In reply, I would say, that we can never judge of the extent of the base of such aneurisms, by their external appearance; an opinion which the above cases will justify; and as, by external examination, we cannot gain knowledge of their inward extent; an incision, though carried widely round the base of such tumours, might, in all probability, pass into the substance, thereby give rise to troublesome hemorrhage, and an increased rate of their growth. And even if, in such cases, we could inclose the morbid parts with an incision, I should fear that the trunks of the deep temporals, would pour out blood very freely, and, in all probability, require dilatation of the wound, for the application of ligatures to stem the hemorrhage; and, above all, as the encircled mass could only receive blood from the bone, (a quantity small indeed,) sloughing of the diseased parts would be the consequence; a process, which, though radical in its effects, would be attended with so much irritation and delay, that I cannot look upon it as a desirable curative mean.

In Graham's case, the tumour was divided throughout its vertical extent, and afterwards plugged with sponge; but the reader will re-

collect, that after this plan of treatment, the disease extended more rapidly than heretofore, therefore I cannot agree to the following passage in Sir A. Cooper's lectures:—"The operation best calculated to cure aneurisms of the scalp, is to cut directly across them, and to make use of pressure to stop the bleeding, to prevent the course of the blood through the swelling, and to produce adhesion of the sides of the sac."

It was stated that, in Graham's case, a ligature was applied to the trunk of the vessel, and that it did not affect the growth of the aneurism; but when we recollect that the morbid mass was fed, not only by the superficial temporal, but also by the frontal and deep temporals, its failure can be easily explained. Hence it may be unnecessary to add, that such a proceeding is not at all adapted, even to suspend the progress of such diseases.

From a consideration of what I have now written, I have no hesitation in recommending excision, as soon after the formation of the disease as possible, as the means best calculated to establish a safe and radical cure.

The next species of aneurism, arising from arteriotomy, which I shall describe, is that of the trunk of the vessel itself; a form of disease of which I have seen many cases, particularly in the ophthalmic hospital of this establishment (which I had charge of, from September 1826 to May 1828.) This is the form of aneurism described by Desruelles; and I can safely say that I never saw a case of this disease, where pressure was properly applied, after the closing of the wound, though the vessel was left undivided. I am particular in this statement; because Desruelles has assigned imperfect division of the vessel, as a cause of the malady. However, I must admit, that I have never observed the disease after the complete division of the vessel; nor is it possible to conceive how it could exist, when such a measure is adopted; but though this may be a certain preventive, still I conceive it to be a bad practice, inasmuch as other means prove effectual, and are unattended with the danger that sometimes follows complete division, when there is a tendency to the formation of anastomosing aneurism. In all these cases, after the performance of arteriotomy, I have observed that the wound healed, and that it was only after the aneurism had acquired some size, that the integuments ulcerated in the site of the cicatrix, giving rise to troublesome hemorrhage.\* At one period, I was in the habit of securing the trunk of the vessel; again, of dividing the aneurism through its centre, and tying the extremities of the vessel; but more lately I have been uniformly successful by making firm pressure with a coin wrapped in old linen, and secured with a firm roller. Indeed, these aneurisms are very common, and very easily cured.

\* It is to be recollected, that in none of the cases of anastomosing aneurism which I have described, did the wound heal after the performance of arteriotomy.



The last form of the disease, which I shall describe, is aneurismal varix, of which I have seen but the following case:—

General D., at. 78, for some years had laboured under carcinomatous ulceration of his left eye and temple. In August, 1826, he had an apoplectic seizure, for which his right temporal artery was opened near the ear, and in consequence of the diseased condition of the left side of his head, pressure was not subsequently employed. He gradually recovered from the apoplexy, and in three months afterwards, I visited him with Mr. Sproute, surgeon of the Royal Engineers, who was his medical attendant, when we found that a regularly formed aneurismal varix was established in the situation where the artery had been opened; but as it was not troublesome, no curative means were had recourse to. In May, 1827, he died; when, on examination, I found that a large dilated vein lay over the artery, adhered to it, and communicated with it, by a small, but well defined and direct opening.

As I stated before, this is the only case of this form of disease that I have observed to follow arteriotomy; therefore my judgment on it cannot be very perfect. But from a consideration of the structure of the parts, I conceive it may be avoided; by not opening the artery close to the ear; as in this situation the vessel has frequently in front of it large and contorted veins; and the parotid fascia, ascending over the zygoma in this situation, will bear off the pressure applied to restrain the bleeding. For I believe these two circumstances favour the formation of a disease, which may be avoided, by opening the vessel where it is only covered by the skin, and comparatively unaccompanied by veins. In the above case no curative means were adopted; but if analogical reasoning be allowed, it is fair to suppose that pressure would have effected a cure.

From the Medico-Chirurgical Review.

#### CLINICAL REPORT FROM THE HOTEL DIEU. By M. BRESCHET.

##### *M. Dupuytren's Treatment of Ranula.*

The subject of this report is the affection called ranula, which is generally imagined to consist in an accumulation of saliva in the sublingual or sub-maxillary ducts, in consequence of their orifice having been choked up. The disease appears to have been tolerably well known to the ancient writers, at least Hippocrates and Celsus make mention of a tumour occurring under the tongue, though they entertained erroneous notions of its pathology. It has been observed by some writers that ranula is more frequent in infants than adults, but M. Breschet is of opinion, from several dissections, that common serous cysts beneath the tongues of children have often been mistaken for this particular disease. The visciditv of the saliva which has been considered as the cause of the disease, M. Breschet looks on merely as the consequence of the plugging up of the salivary canal, which may arise either from inflammation of the mucous mem-

brane, aphthæ, or ulcerations in the canal itself. In dividing the frænula linguæ, some of the excretory ducts which open on its sides may be wounded by the knife, and afterwards become obliterated by the cicatrix; small calculi will also occasionally form within the ducts and check the flow of the saliva, a circumstance which happened to the late Mr. Cline, and gave him considerable inconvenience. The amount of these concretions is at times considerable, and the fluid, instead of resembling saliva, may be puriform, or even entirely purulent.

The symptoms of ranula are easily distinguished by a surgeon at all cognizant of the affection. The tumour is soft, whitish, regularly round or oblong, situated just beneath the tongue, having neither pain nor redness, nor, in fact, any of the characters of inflammation; elastic, fluctuating, at first so small as scarcely to be felt, and slowly acquiring size. In general, its volume is little larger than a nut or pigeon's egg, but in some instances it far exceeds this, and M. Breschet remembers having seen a man in whom the tumour appeared beneath the chin, and stretched from that in front of the neck, almost to the sternum, entirely preventing circulation. In a case which happened to Le Clerc, the tumour filled the mouth, thrust forward the teeth, and formed a prominence externally as large as a duck's egg. It may perhaps admit of doubt whether these large tumours are really dilatations of the sub-maxillary or sub-lingual ducts, but, whatever they may be, they cause extreme distortion, doubling back the tongue, displacing or pushing out the teeth, altering the voice or preventing articulation altogether, and hindering suction in children, mastication and deglutition in adults.

The treatment resolves itself into palliative, and that which aims at a radical cure. The first consists in merely making and opening into the tumour within the mouth, and evacuating the fluid which it contains. Some have made their incision beneath the angle of the jaw, instead of within the mouth; but this plan is attended with danger of a salivary fistula. Le Clerc, however, operated in this manner with complete success; but probably his case was one of those where a large cyst exists filled with serum, instead of the true ranularv tumour. When a simple puncture has been made the orifice quickly heals, the fluid again collects, and a fresh operation is required: indeed Petit relates an instance, where it was repeated ten times, and was ineffectual after all. Some have practised large incisions in the sac, others have cut out portions of it, and introduced into the opening tents of various kinds, portions of bogie, &c.; while Sabatier employed a canula, which he left until the edges of the opening had become completely callous; but all these plans have failed in other hands. A large portion of the walls of the tumour has been removed, but though this operation may delay cicatrization, it does no more—the wound ultimately heals, and the malady returns. It has been



proposed to extirpate the tumour, but unless the gland which fed it were extirpated too, the operation would in all probability be ineffectual, and it would be a bold attempt indeed to perform so severe an operation for so harmless a disease. If, as is supposed, the disease consists in an obliteration or obstruction of the salivary duct, then the employment of stimulant injections, as has been recommended, must be worse than useless, because they tend, of course, to increase the agglutination and obstruction. This is not the case when it is a common cyst, containing serum or lymph, for here the puncture of the tumour and employment of irritating injections would probably be of service.

The use of the actual cautery as a mean of opening the tumour, and preventing the opening from closing afterwards, is of very ancient date, as ancient indeed as the times of Hippocrates, who employed it himself. Acids have also been had recourse to, and Camper employed the lapis infernalis, although he confesses that it was frequently ineffectual; in short, all the methods which have been proposed or executed have been more or less unsuccessful in the long run. This want of success depends upon the tendency of the artificial opening, whether it be made by incision, or by the cautery, to contract and close; but M. Breschet tells us that Baron Dupuytren has at length discovered a method by which the closure of the wound is entirely prevented. Having made an opening into the tumour, the Baron takes a small instrument invented for the purpose, introduces it, and allows it to remain, just as the stilette is allowed to lie in the lachrymal canal, after the operation for fistula lachrymalis. This instrument appears from the description to be very similar in principle to that invented by Mr. Weiss for perforation of the soft palate. It may be made of silver, gold, or platina, and consists of a hollow cylinder, about three lines in length, and one, or one and a half in diameter, with a small, elliptical plate, convex externally, attached to either extremity of the tube. The use of these two small plates is to prevent the tube from slipping either *into* the dilated duct, or *out* of that into the mouth, for the opening having been made, and the tube introduced, one plate of course lies on the *inside* of the wall of the tumour, and the other on the *outside*, retaining the instrument in its position. If the tumour be of great size, or its walls much thickened, a free incision should be had recourse to before the application of the tube; in some cases it may be even necessary to cut out a portion, and allow the wound to nearly close prior to the introduction, but with these precautions our author affirms that M. Dupuytren has experienced complete success. Five cases are given in illustration, all of them occurring at the Hôtel Dieu, and therefore above suspicion of inaccuracy or colouring.

Case 1. Bruno Duchâteau, æt 24, ex-tambour of the garde-impériale, was admitted, October 14th, 1807, with a small oblong tu-

mour beneath the tongue, appearing to be a dilatation of the excretory duct of the sub-maxillary gland. Every kind of treatment had been adopted—incision—excision—cauterization, but all with the same success, or rather want of it. The Baron having opened the tumour with curved scissors, and given vent to a quantity of limpid, inodorous fluid, took up the little silver tube with a pair of forceps, and introduced it into the opening, so that one plate lay within the tumour, and the other on its outside, in the mouth. The disease very quickly disappeared, and in fifteen days the patient left the hospital, being able to eat, speak &c. with the most perfect ease.

In the second case, the tumour had existed for several years, was about the size of a pullet's egg, and was perfectly cured by the above means. In the third case, there were tumours, one on each side. M. Dupuytren, for experiment's sake, introduced the instrument into one, but contented himself with merely making an incision into the other. The former was cured, the latter not, when the Baron treated it in the same way, with the same success. The two other cases were equally fortunate, save that in the last a tumour re-appeared, almost on the site of the one which had been treated. It was found, however, to exist in the dilatation of another duct, and after being punctured was dispersed.

The "sub-lingual and sub-maxillary tissues" are subject to an inflammatory swelling, which may be mistaken by an unpractised surgeon for common ranula, but which requires a very different treatment. The tumour in this case appears suddenly, increases quickly, and is accompanied by tension, pain, and redness. The following is a case of this kind.

Mary Eugrot, æt. 21, having irregular menstruation, entered the Hôtel Dieu, May 20th, 1821, with a hard tumour, beneath the lower jaw, formed by the sub-maxillary gland. The enlargement had been present for upwards of six years, was about the size of a pigeon's egg, painful to the touch, and, on the least pressure, there was forced into the mouth a fluid, made up of mingled pus and saliva. On the other side, there had formed beneath the tongue, within the last six weeks, a hard elastic tumour, which prevented speech, and caused some difficulty of respiration and deglutition. Its redness, pain, and hardness, induced M. Dupuytren to think it depended upon inflammation of the sub-maxillary duct, and accordingly he applied leeches, emollients, and derivatives. In four-and-twenty hours there was a marked melioration, and at the expiration of a week she left the hospital, without either pain or tumour.

We have thus given an exposé of the practice of that distinguished surgeon, M. Dupuytren, in a very troublesome affection. Whether the plan he has recommended and adopted will be equally successful in other hands we shall not pretend to say; but, at any rate, it is worth a trial, particularly at our hospitals. By-the-bye, we think our English reporters somewhat behind their French *confrères* as



yet; at least as far as the *utile* is concerned. In the *dulce*, i. e. the transmutation of certain sheets of letter-press into the much abused and much loved "filthy lucre," we verily believe that our native "gentlemen of the press" have fairly won the day. The fact is this, that the French reporter, for the most part, takes up a certain point of practice, and illustrates it, as far as possible, by a variety of cases; whereas, the Englishman is too much in the habit of giving a solitary case or so, because it is "curious" or out of the way; in other words—good for nothing.

From the London Medical and Physical Journal.

**CASE OF ARTIFICIAL ANUS**, arising from *Ulceration of the Transverse Arch of the Colon; which, after discharging Feces for eighty-one days, spontaneously closed.* By EDWARD SWARBRECK HALL, Member of the Royal College of Surgeons, London; Surgeon to the South Dispensary, Liverpool.

The subject of this case was an active, volatile girl, eleven years old. My attendance upon her commenced on the 13th October, 1827. She had then been ill six days. Her indisposition came on with pains in the belly, vomiting, loss of appetite, thirst, and fever. At the time of my visit, she was suffering from the usual symptoms of peritonitis: diffused pain over the abdomen, increased upon pressure; moist, furred tongue; dry skin; pulse 120, and weak. She was also considerably emaciated. The application of a few leeches, together with fomentations and a little diaphoretic medicine, relieved her very much. Two days afterwards, the symptoms recurred with additional violence, but were easily subdued by a small general bleeding, a blister over the abdomen, and small doses of tincture of colchicum with sweet spirits of nitre. On the 19th instant, I ceased attending my patient, as she was well nigh recovered, and her parents were afraid of incurring much expense.

On the 29th instant, I was again sent for. I found ascites had taken place; some pain of the belly had returned, with palpitation of the heart, and a pulse up to 140, but unresisting. Local blood-letting was again resorted to, and the tinctures of colchicum and digitalis, in small doses gradually increased, prescribed. By the 12th of November, the dropsical symptoms had all disappeared. For some days antecedent to that date, the bowels had not performed their functions with regularity, which I attributed at that time to their having been the outlet by which the greater part of the dropsical effusion had been carried off; neither the kidneys nor skin acting with more than their usual energy. At times, even after the dropsy of the belly was dissipated, the dejections were so numerous that my patient was unable to rest at night. They were exceedingly offensive, of a whitish colour, and sometimes had very much the appearance of yeast. I have now little doubt that the mucous glands of the in-

testines were diseased; and probably the enlargement of the mesenteric glands, which was subsequently developed, arose from that source. The pulse was never below 120 for three months, and the tongue was more or less furred for the same period.

At this time (12th November,) I commenced the use of small doses of blue-pill, which was persisted in until my patient became convalescent; sometimes combining it with narcotics, and at others with gentle purgatives, such as rhubarb. In fact, my treatment throughout this complaint was entirely on the principles of one of my much respected teachers, Mr. Abernethy, a gentleman who will ever be remembered with gratitude and respect by those who have had the honour of being his pupils. "You have no right to dictate to nature," he would say: "soothe irritation, aid her in her efforts, but do not attempt to control her."

On the 30th of November, my attention was directed to a red, prominent, and painful swelling, of about the size of a pigeon's egg, immediately below the umbilicus. It resembled a furuncle in some measure, wanting, however, the characteristic hardness of a swelling of that nature, and having rather an elastic feel, as if distended with air. The whole belly likewise was somewhat tumid and elastic; the legs were slightly œdematous, the pulse considerably accelerated, and thirst very much complained of. I ordered the tumour to be poulticed, and two table-spoonfuls of a saline julep to be taken every two hours.

At my next visit, the tumour presented a very singular appearance: the superincumbent cuticle was raised from the cutis, like a blister, but was quite elastic, and evidently distended with air. I made a very small puncture in it with my lancet: a pretty smart report followed, and very fetid air, having the odour of the gas usually discharged per anum, escaped. After this had ceased to issue, a small quantity of fecal matter exuded from the aperture. From the appearance of the fecal matter, odour of the liberated gas, and situation of the opening, I had no doubt it communicated with the transverse arch of the colon. It is most probable that, during the early part of the complaint, the colon was united to the parietes of the abdomen by adhesive inflammation, and that then ulceration commenced in one of the diseased mucous glands, and gradually extended through the coats of the intestine and walls of the abdomen. Indeed, I remember that at one time, during the existence of the diffused pain over the abdomen, she complained of it being more severe in the neighbourhood of the umbilicus than any where else, which induced me to examine that region very attentively; but I did not discover any hardness or tumefaction on that occasion. At a later inspection (13th January) I could trace very distinctly an irregular induration in that situation, which I believed to be in the meso-colon.

Next day (December 2d,) I found my patient something easier: her tongue was less furred, pulse not so rapid, and thirst abated.



She had passed several evacuations per anum since my last visit. Upon removing the dressings from the belly, gas again escaped. I found the cuticle which had been raised entirely detached, and beneath it in the cutis two points of ulceration, not exceeding the magnitude of pins' heads: feces slowly issued through them.

From this time until the artificial anus got well, poultices were applied every two hours. Various tonics were prescribed during the further progress of the disease, particularly sulphate of quinine; at the same time continuing the use of the blue-pill. Generous diet was allowed her, and wine, ale, and porter freely administered. Of course, particular symptoms were prescribed for as they arose.

It would swell my communication too much to relate the daily changes that took place from this time forwards: suffice it to give a condensation of the most important ones.—The apertures in the abdomen slowly enlarged as the disease advanced, until they would admit a moderate sized goosequill, but never extended beyond that magnitude. The surrounding integuments always preserved a healthy aspect. The discharge from the artificial anus varied exceedingly: sometimes none would take place for several days, and at others it would be very profuse, probably a quart or more in twenty-four hours. Its consistence, odour, and appearance, were also subject to variation: on one occasion, when my little patient was so bad that I apprehended her almost immediate dissolution, the smell was distinctly gangrenous; at other times it had a musty, disagreeable odour; but the highly feculent smell was most prevalent. She was frequently troubled with colicky pains, but never to any great extent, and generally previous to a defecation per anum. The anal evacuations were as mutable as those from the artificial openings, and pretty generally in an inverse ratio: that is, when the one was profuse and watery, the other would be trifling and consistent. The pulse sometimes rose as high as 160 beats in a minute, but was always weak and unresisting; and, as I have before stated, was never below 120, until the 30th January, at which time some amendment of my patient's health began to take place. The anasarca of the extremities became so great, that I was afraid the integuments would have sloughed; and it was not until her recovery was considerably advanced that it began to diminish. She was often affected with hysterical symptoms, inability to retain the urine, cough, and difficulty of deglutition. For several days, she was reduced to such an excessive state of debility that she could not articulate or move herself in bed. Her appetite was at all times exceedingly capricious, being at one period voracious, at another she subsisted for days together merely on fluids. She was likewise very often subject to vomiting, and for many days nothing would remain on her stomach but a little cold ale.

On the 30th January, a decided melioration of her symptoms took place, and from that

date she continued to improve. On the 13th February she was able to leave her bed, to which she had been confined for the protracted period of three months. The artificial anus ceased discharging on the 19th of the same month, and in eight days no aperture whatever could be detected; a puckered depression, that would admit the point of the finger, existing in its site. Her appetite had lost its fickle character, and any kind of food agreed with her. The bowels had completely resumed their healthy functions, and the evacuations were perfectly natural. Up to the present time she has remained quite well, with the exception of occasional slight pains in the belly. Her abdomen is still rather protuberant, and irregular indurations, as if of enlarged mesenteric glands, can be detected. Should she not have a daily evacuation from the bowels, which she commonly has, she feels some uneasiness, and the site of the artificial anus, instead of being depressed, becomes pouting.

Ulceration of the walls of the intestines, followed by the effusion of their contents into the cavity of the abdomen, and thereby destroying the patient, is not an uncommon consequence of disease in the mucous membrane of the bowels: but I am not aware that a case similar to that which I have related has ever been recorded. There are two cases in Mr. Howship's work on the Intestines which bear some relation to it, but they are by no means parallel.

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From the Medico-Chirurgical Review.

#### MEDICAL STATISTICS.

Modern records and researches would seem to hold out some prospect of immortality to man, even in this world. At all events, we may fairly hope that the "march of intellect" will slacken the pace of TIME, or so shorten the length of his scythe, that he will not mow down one half the number which he has been wont to do. Whether this change may be attended by a proportionate increase of happiness among mankind, is another question, and one which we cannot pretend to solve. Dr. Bisset Hawkins will certainly contribute to lower the premiums on life insurance, in this country, though peradventure his *assurances* may ruin some of the numerous companies which must start on the prospect of the increasing longevity of mankind. It is not our intention, however, to enter on the laborious researches of the learned Doctor, as detailed in his recent Lectures, at the College of Physicians. We shall, in this place, glance at some medical statistics which have been laid before the Royal Academy of Medicine, by Dr. Vilem , respecting the connexion of births and deaths with rigorous and mild seasons—scarcity of provisions—healthy or unhealthy places of residence—political events—manners—industry—in a word, the entire state of civilization. The author comes to the



following conclusions, as far as PARIS is concerned. The actual annual mortality of its inhabitants is 1 in 32. In the 17th century it was 1 in 25 or 26. In the 14th century it was 1 in 16 or 17.

Formerly the deaths in Paris considerably exceeded the births:—now, the *latter* predominate. There is one birth annually among every collection of 29 or 30 inhabitants. The maximum of mortality, at present, is in the Spring:—formerly, it was in the Autumn, especially in the months of August and September. There are more male than female still-born children—and there is greater mortality, during the first three months (after birth) among the former than the latter. “The month of June shows the maximum of conceptions and the maximum of births.” It is difficult to account for this fact; for if most conceptions take place in June, most births should occur in March or April. Indeed, we imagine that *maximum* in the latter part of the sentence should be *minimum*: for immediately afterwards we have the following statement.—“Le mois de Mars et d’Avril sont ceux qui presentent le plus grand nombre de naissances.”

The opulent and the indigent classes of society present great differences in respect to relative mortality. Thus, in the richer quarters of the capital, there is one annual birth to 41 inhabitants. In the poorer quarters there is one birth to 29 or 30 of the population. In this calculation, the children of the poor, born in hospitals, are not taken into account. These would, of course, greatly increase the number of births among them. Nevertheless, it is found, that among the opulent classes of society, there are more children living under the age of five years, than among the indigent:—the inevitable conclusion is, that, although the poor people beget more children than the rich, they do not preserve so many.

Of 100 children abandoned (this must allude to asylas for the illegitimate) 60 perish within the first year. This ratio of mortality, however, among “*les enfans trouvés*,” is annually diminishing. Scarcity or famine greatly diminishes the number of births. The fecundity attendant on marriages has been regularly diminishing during the last hundred years. The reasons assigned by the author for this decrement, we shall give in his own words. “C’est aux froids calculs de la fortune, c’est aux prévoyances extrêmes suscitées par le goût du luxe ou par l’amour de l’aisance qu’il faut sans doute en attribuer la cause.”

The talented author passes in review, year by year, since 1680, the great moral, political, and physical events which have occurred in Paris, and their influence on the population. The general conclusion is:—“that, each time the people suffer, whatever may be the cause, the number of deaths is increased—the number of births is diminished, and the mean duration of life is curtailed. On the other hand, whenever the people are happy, the reverse of the above obtains.”

Not being acquainted with all the data on

which Dr. Hawkins founds his cheering prospects of increased health and longevity, we shall not attempt to invalidate his positions; but we shall take the liberty of commenting on a few points, which happen to come within the scope of our own observation. The Doctor appears to us, to attribute a great deal more to medical art in the preservation of life, than he is justified in doing. Thus, he says, that in fevers, if left to themselves, there would probably be about one death in two; while treated according to modern scientific principles, *six out of seven*, or even *eleven out of twelve* will be saved! We are extremely sceptical as to the soundness of this position—nay, we verily believe, that taking all circumstances into account, nearly as many fever patients would recover on *whey*, as on the most costly and polypharmic treatment that modern medicine could devise. The Doctor evidently looks to the favourable side of the question on all occasions. We shall only be able to glance at one or two illustrations which he brings forward. “To mark the improvement of health in our navy,” says he, “we may compare the fate of Commodore Anson’s crew, with a ship placed in *similar circumstances* about fifty years afterwards. Anson passed 143 days at sea, without touching at any place of refreshment. On his arrival at Juan Fernandez, half of his companions alone survived; and of the remaining 200, only 8 were efficient. But, in 1794, the *Suffolk*, a 74 gun-ship, during 162 days, had no communication with land, and arrived in India without the loss of even one man.” But surely Dr. Hawkins is not in earnest when he makes the *Anson*, struggling round Cape Horn, against adverse winds, and among dreary, barren, and dangerous rocks, where hope was extinguished and human strength exhausted—to be *similarly circumstanced* with the *Suffolk*, sailing on velvet, before the balmy trade winds to the land of pagodas, at the beginning of the war, in which every common sailor expected to make a fortune! Perhaps, in the whole annals of navigation, from the *Periplus* of Hanno, down to Parry’s “*Noctes Atticæ*,” among the ice-bergs, so remarkable a contrast could not be found as that presented by the *circumstances*, moral and physical, in which the crews of the *Anson* and *Suffolk* were placed. But, let us come down nine or ten years later, and see what happened. A frigate, just fitted out with a wretched heterogeneous crew, was despatched without an hour’s preparation, for the East Indies, in order to give notice of the new war which broke out in 1803. That ship went to the East Indies, without losing a man, without presenting a single symptom of scurvy, though the crew lived on salt-junk during the whole of the voyage. Here, says Dr. H. is a fine illustration of my position. Softly kind Sir! Two other ships were fitted out for the East India station, immediately after the one alluded to; but they were stored with lime juice, and every thing that could be supposed contributing to health on a long voyage. They sailed, and they arrived at Madras complete



lazarettos, the crews being eaten up with scurvy and scorbutic ulcers! In short, they were pretty much in the condition of the Anson's crew. How is this to be accounted for? Readily enough. The first ship that sailed was peculiarly fortunate. She took prizes in every parallel of latitude, and the crew were elated beyond measure at the success already obtained, and the prospect of its continuance. The other two ships sailed with similar hopes; but they were cruelly disappointed. Not a Frenchman ever crossed their track—not a shilling of prize money did they make! The consequence of these mental depressions were corporeal diseases.

Dr. B. seems to pity the Roman legions, who had only one medical officer to three or four thousand men. They were still worse off, we should imagine, at the siege of Troy. But when we reflect on the powers of dame Nature, and the hardy constitutions of those times, we doubt whether the paucity of Doctors made much difference in the general average of mortality. In ordinary circumstances—in accidents—and in inflammatory diseases, medicine is very powerful; but when the epidemic influence has once gone abroad in the atmosphere, small is the share which the most consummate medical skill has in checking the mortality.—The plains of Bengal, the islands of the West, the swamps of Walcheren—nay, the very rock of Gibraltar, which is quoted by Dr. Hawkins, afford melancholy proofs of the position here mentioned. The increase of longevity, then, we are inclined to attribute to moral and physical causes which are little under the control of medical art. Indeed, we are forced to agree with M. Vilermé, that—when people are *happy* they will be healthy and long-lived, and *vice versa*.

From the Medico-Chirurgical Review.

#### EXTENSIVE SPINAL DISEASE.

A young man, 26 years of age, born of phthisical parents, and who lost two sisters by pulmonary disease, took to the occupation of chimney-sweeper, at the age of twelve, and led a drunken and irregular life—sometimes sleeping on wet straw, in barns and out-houses, Summer and Winter. After a night spent in this way, he experienced some stiffness in the lower extremities, accompanied by weakness. These spread to the arms—and, in the course of a year he became affected with vertigo in the head, and tremor of the limbs. These incapacitated him for his occupation. One day he fell some yards down a chimney, and cut his head against the iron scraper; but the wound healed, without much difficulty. Nevertheless, the trembling, and weakness of the limbs, increased very much after this accident, and he was obliged to seek refuge in an hospital. When received, he presented the following symptoms:—tremor, and even convulsions, (on making any exertions) in the upper extremities—inability to

stand or walk, without stumbling—heat and sensibility of the surface natural—no pain in any part of the spinal column—constant sense of vertigo—no headach—chest well formed—respiration easy and deep, with the power of lying in any position—all the secretions and excretions natural—appetite good—intellectual faculties weak.

The disease was considered to be, effusion into the vertebral canal, with some affection also of the head. A seton was made in the nucha, and various remedies were prescribed, which we shall not here enumerate. Moxas were also applied to the spine. A long, and pretty severe course of tartar-emetic, however, nearly removed the tremors and vertigo. The patient had got to the quantity of 24 grains of tartrate of antimony in the 24 hours. But the patient did not gain strength, and he left the hospital uncured. In July, 1826, he had another fall down a chimney—bruised his chest—and spat blood, with cough, pain in the thorax, and other symptoms which led the medical attendants to suspect serious mischief. A violent fever supervened, and again he entered the hospital. On examination, no disease of the lungs could be ascertained, but the heart was found pulsating in the right side of the chest. The expectoration indicated approaching phthisis, and was mixed with blood. After various vacillations, and a variety of remedies directed towards symptoms as they arose, anasarca came on, and the miserable patient sank exhausted, on the 16th November, 1826.

*Dissection.*—There were several vesicles filled with fluid between the dura mater and pia mater—the latter membrane was every where thickened and opaque—substance of the anterior lobes of the brain remarkably dense—six ounces of clear water in the ventricles—no disease of cerebellum. The spinal marrow was examined with great care. Nothing wrong appeared in its coverings. When these were slit open in front, the spinal marrow bulged out in five different places, giving the appearance of five salient points composed of whiter substance than the rest of the cord. On examining the two superior projections, the structure of the cord was found disorganized, and changed into a substance resembling thick pus. Beneath the third prominence there was found imbedded in the spinal cord, a solid body, of a kidney shape, and extremely vascular. A similar substance was discovered in the fourth projection. Between these salient parts, the spinal marrow presented a natural appearance. The lungs were disorganized—partly tuberculous, partly suppurated. The heart and pericardium were unaltered.—*Jour. Complem. Feb. 1828.*

We shall not enter into the numerous remarks and reflections which the author has appended to this curious case. It is evident that great disorganization both of the brain and spinal marrow must have obtained, at the time when this miserable man was pursuing his avocation of chimney-sweeping, four or five months before his death!



From the Medico-Chirurgical Review.

ON NERVOUS AFFECTIONS OF THE HEART AND VESSELS. By the late M. LAENNEC.

[Forbes's new Translation.]

As it is our intention shortly to dedicate an article to organic diseases of the heart, and as that article must necessarily be a very extensive one, we take this opportunity of touching on what the illustrious pathologist above mentioned has denominated "NERVOUS AFFECTIONS" of the Central Organs of the Circulation and its great Outlets. M. Laennec justly observes, that the study of pathological anatomy has not been unattended with the disadvantage of blinding a considerable proportion of students and practitioners to every thing but organic lesions—to all affections of the nerves—to all changes in the fluids. "Nevertheless, (says he,) we are bound to admit, that every disease in which we can discover no constant lesion of the solids, nor evident alteration in the fluids, must consist in some disorder of the nervous influence." Of this class are several cardiac and arterial affections, which we are now to notice.

I. NEURALGIA OF THE HEART.

It is by no means uncommon to hear people complain of pains in the region of the heart, resembling rheumatic or neuralgic affections, and which are too frequently set down by inattentive practitioners as organic diseases.

"Sometimes these pains are confined to this spot, but frequently they extend at the same time, or vicariously, over a greater or less portion of the lungs and stomach. Sometimes they exist simultaneously in the superficial cervical plexus, and extend along the tract of the branches supplied by this to the anterior parts of the thorax; still more frequently, at the very time they are felt most severely in the heart, they shoot with corresponding violence along the nerves of the axillary plexus, and more particularly along the brachial nerve to the elbow, and sometimes as far as the fingers. When this is the case, the affection is confounded with a nervous disease which, during the last twenty years, has been the subject of much discussion, and seems to me only a variety of the neuralgia in question. This disease is the *angina pectoris*, which is very remarkable, and very distressing, when it exists in a high degree, but which is far from possessing the degree of severity attributed to it by many authors."

Laennec first describes what has been called *angina pectoris*, before he discusses the English pathology of the disease—namely, change of structure in the heart. The following concise description of this dreadful disease is deserving of record.

"The attack commences with a sense of pain, pressure or constriction in the cardiac region or at the end of the sternum. There is at the same time a numbness, occasionally attended with pain in the left arm; rarely in both arms or in one half the body; more rarely still in

the right arm only; and sometimes in all the limbs. The painful sensation is particularly felt on the inner side of the arm, as low as the elbow; and sometimes, as already mentioned, it shoots still further down. It is not unusual for the patient to suffer, at the same time, from pains over the fore part of the left chest; and in the female, these sometimes so affect the mamma that the slightest pressure becomes painful. Sometimes, particularly when the paroxysm is severe but short, the patient feels as if the same parts were pierced by iron nails or the claws of an animal. There are also pains in different points of the chest, dyspnoea (in extreme cases suffocative orthopnoea,) violent palpitations, congestion of blood in the head, and sometimes syncope or convulsions. When the attack is over, the patient merely retains a slight feeling of these various symptoms, particularly the numbness of the limbs, the left more especially."

It is well known, that Heberden and Parry attributed this peculiar disease to ossification of the coronary arteries—and this opinion has been embraced by several others. Nothing, however, can be more erroneous than this doctrine. Not one case in ten will be found to present this alteration—and, what is more, the symptoms of *angina pectoris* are seldom present in those cases where the ossification is found. The general belief in England, Italy, and Germany, is, that the said train of symptoms is dependent on some organic lesion of the heart—that the disease is almost always fatal. Laennec is of a different opinion.

"*Angina pectoris*, in a slight or middling degree, is extremely common, and exists very frequently in persons who have no organic affection of the heart or large vessels. I have known many individuals who had suffered a few very severe but short attacks of it, and had had no further return of it. I am even of opinion that the prevalent type of disease influences its development, as I have some years met with it frequently, and hardly at all in others. On the other hand, it is certainly true that this affection frequently coincides with organic diseases of the heart; but nothing proves even then that it depends upon such diseases, inasmuch as they are of various kinds, and as the *angina* exists without any of them. I have examined several subjects who had laboured under this disease, and in whom there coexisted either hypertrophy or dilatation of the heart; and in none of these did I find the coronary arteries ossified. One of these died suddenly during an attack of *angina*; and such a result need not surprise us, when so severe a nervous affection coexists (as in this case) with extensive hypertrophy. Dr. Desportes, in a dissertation published some years since, has stated opinions very analogous to mine, respecting the nature and seat of this affection: he considers its site to be in the pneumogastric nerve. I conceive that the site of the disorder may vary, according to circumstances. For instance, when there exists, at the same time, pain in the heart and lungs, we may presume that the affection is principally seated in



the pneumo-gastric; on the other hand, when there is simply a sense of stricture of the heart, without pulmonary pain or much difficulty of breathing, we may consider its site to be in the nervous filaments which the heart receives from the grand sympathetic. Other nerves are also simultaneously affected, either by sympathy or from direct anastomosis; for example, the branches of the brachial plexus, particularly the cubital, are almost always so; the anterior thoracic originating in the superficial cervical plexus, are also frequently affected; and this is also sometimes the case with the branches derived from the lumbar and sacral plexuses, as we find the thigh and leg now and then participating in the pain and numbness. I have even seen the affection confined to the right side of the thorax. In this case the pain and numbness extended to the arm, thigh, and spermatic cord of the same side, and the testicle became swollen during the paroxysms. There was scarcely any pain in the region of the heart; but the attacks were attended by severe palpitation, without any sign of organic lesion of the heart."

The character of the symptoms, M. Laennec thinks, confirms this opinion. We know that neuralgia of the most unequivocal kind, as sciatica and tic douloureux, give rise to the same variety and species of effects as angina does—namely, acute pain, painful torpor, simple numbness along the tract of nerve, and sometimes spasm of the parts to which the nerves are distributed.

It would be useless to discuss the various opinions on this disease, which have been broached by different writers, since the time of Parry and Fothergill. Dr. Forbes is inclined to agree with Hosack, that the disease "most frequently arises from a plethoric state of the blood-vessels—more especially from a disproportionate accumulation of blood in the heart and large vessels." Dr. F. observes also that, "in persons subject to this complaint, in whom no severe organic disease of the heart existed, he has generally found, by auscultation, that the organ was possessed of thin parietes and feeble powers." It would require a very long life, and a very extensive experience, to speak generally, and with much confidence, on the pathology of angina pectoris. Not more than three or four opportunities have occurred in our own practice, of examining, post mortem, those who have fallen victims to the disease. In only two, was there ossification of the coronary arteries, and, in these, there were other organic lesions. In all the cases, there was a flabby, soft state of the muscular structure of the organ, whether or not accompanied by much fat. But we have seen several cases, unaccompanied by dissection, where there were strong reasons to believe that the disease could not be fairly attributable to ossification of the coronary arteries—and we have found this state of vessels in several subjects, where there was no symptom of angina pectoris before death. The impression on our own minds is, that the nerves of the heart are implicated in the pathology of

the disease. The wasting and flabby structure of the organ are, in themselves, rather favourable to this doctrine. We see the muscles of a limb waste and become flaccid, where neuralgia, for example, sciatica, has long obtained. In short, wherever PAIN is a prominent symptom in any complaint, we have a fair right to conclude, that the nervous system of the organ is implicated in the pathology. That the symptoms included under the term angina pectoris may proceed from other causes than affection of the nerves, we will not deny—or at least that various organic derangements may be found after death; but, as the paroxysms come on like those of apoplexy, at various intervals, the organic change necessarily remaining the same, it is reasonable to infer, that the ostensible change of structure detected by the scalpel is rather the predisposing, than the direct occasional cause of the paroxysm. A determination of blood to the head, where there is disease of structure in the brain, will bring on the attack of apoplexy—and so a neuralgia may induce a paroxysm of angina pectoris, where there is already some defective structure in the part. The following therapeutic extract is rather curious.

"The means which I (Laennec) have found most successful in relieving neuralgia of the heart, whether existing in so violent a degree as to be named angina pectoris, or only under the form of slight pains confined to the heart, are those formerly mentioned in the case of neuralgia of the lungs, and especially of the magnet. This I use in the following manner: I apply two strongly-magnetized steel plates, of a line in thickness; of an oval shape, and bent so as to fit the part,—one to the left precordial region and the other exactly opposite to the back, in such a manner that the magnetic current shall traverse the affected part. This method is not infallible, any more than others employed in nervous cases; but I must say that it has succeeded better in my hands in the case of angina than any other, as well in relieving the paroxysm, as in keeping it off. Magnetism was, perhaps, too much cried up by some medical men in the last century; but I am of opinion that it is too much neglected at present. That it acts on the animal system, is sufficiently proved by the fact of its giving rise not only to very obvious general effects, but even to local ones. In the case in question, after a certain time it most commonly produces an eruption of small pimples, which are sometimes so painful as to oblige us to interrupt the process for some days. This effect cannot be attributed to the action of the oxidized plates on the skin, as the eruption almost always takes place under the anterior one: and I have observed similar results from plates applied over the abdomen and loins. By means of these plates (applied to the epigastrium and spine) I stopped, at once, a hiccup which had lasted three years. At the end of six months, the patient having one morning neglected to put on the plates, the hiccup returned; but was removed upon their being replaced. In another case in a patient affected



with imperfect paraplegia, without any sign of structural lesion of the spine, and for which moxa had been used without success, I inserted, to the depth of half an inch, a needle near the vertebral column and another into the thigh near the external popliteal nerve, and connected these by means of magnetized rods; and at the very instant of contact, there occurred an involuntary dejection, which had never previously happened to the patient. In the angina when the magnet gives but little relief simply, this is sometimes found to be increased on applying a small blister under the anterior plate. During the paroxysm, if the oppression is considerable, we must bleed the patient, if he is at all plethoric. Leeches applied to the epigastrium or cardiac region sometimes give more relief than venesection; but sometimes their application is impracticable from the extreme agitation of the patient. Derivatives are also beneficial, particularly sinapisms to the lower extremities and blisters to the fore part of the chest; as are also antispasmodic medicines, with the infusion of cherry laurel or digitalis, and also the fetid gums. A mild regimen, with the use of the tepid or cold bath, according to the season, are among the best means for preventing a return of the paroxysm."

As to the magnetic treatment, we cannot say any thing from personal observation. The management of the paroxysm must be very different from the treatment during the intervals. Those who have witnessed a severe attack of this terrible disease, can never forget it. The sufferings of the patient must be dreadful. The respiration is sometimes threatened, and the rattling in the throat induces us to draw blood in order to prevent immediate suffocation. In other instances, the breathing appears but little affected, and a cessation of the circulation seems impending, and we are forced to administer cordials. In almost all cases, anodynes and ether, with camphor, are necessary. In the intervals, quietude and temperance, with tranquillity of mind, would be the surest prophylactics—where, alas! are these to be found in this world? Those who have not real woes are tormented with imaginary ones—or, at least, woes of their own creating. Within these very few weeks we witnessed a most distressing case of this disease, which has made a strong impression on our minds, and harrowed up the recollection of several other instances of this deadly malady.

The patient (General B——) was on the borders of 80 years; but remarkably healthy, hale, and vigorous for that advanced age. He was of a very florid complexion, and plethoric constitution—had resided long in a tropical climate—and was addicted to the pleasures of the table, not amounting perhaps to what might be called intemperance. Up to within a very few weeks of his death (February, 1828) he took active and passive exercise in the open air, and could walk from his residence in Portland Place to the Royal Exchange, as quickly as most men of 50 years of age, though now 80.

He had undergone the operation of lithotomy some 20 years ago, under Sir Astley Cooper, and had no return of stone. He never made any complaint of heart affection, and had a strong, equal, and excellent pulse. His only complaint was a sense of occasional fulness about the head, for which he often resorted to cupping. He had also some slight dyspeptic symptoms, in the shape of acidity—depression of spirits—irritability of temper. A very few weeks before his death he complained of shortness of breath, and pain darting from the region of the heart down along the left arm, when ascending the stairs of his own house—and, latterly, when walking in the street, especially if he went against a current of wind. The writer of this article was consulted, and on strict examination, could detect no change of structure or irregularity of action in the heart. He readily recognized, however, that the patient had symptoms of angina pectoris, and stated this to his friends. He advised quietude, temperance, and abstinence from all active exercise. But neither the General nor his friends would be quiet—and therefore they summoned a celebrated surgeon, whose knowledge of *anatomy* must, of course, enable him to detect the most obscure diseases of internal parts. He came—saw disorder of the "digestive organs"—and prescribed blue pill at night, and black draught in the morning. Six days after this treatment had been put in force, the writer was summoned, in the middle of the night, to the patient, who was said to be dying. When he arrived, the General was labouring under one of the most terrific paroxysms of angina pectoris which he ever witnessed. The face was pale, the lips blue, the countenance indicative of unutterable anguish, the pulse scarcely perceptible, the breathing laborious, with what has been not inaptly termed, the "dead rattles" in the throat. The unfortunate sufferer was propped up in bed—tossing from side to side—praying for relief from the horrible pain in the region of the heart and left arm. It was evident that the lungs were gorged with blood, and a lancet was immediately pushed into a vein in the arm. At first a little black blood trickled out—then it came more freely—and, at last, in a stream. When twelve or fifteen ounces of blood were abstracted, the "dead rattles" ceased—the pulse rose—and relief was considerable, though by no means complete. Thirty drops of Battley's liquor opii sedativus, which happened to be in the house, were given—and, in an hour, the patient fell asleep. Next morning, all urgent symptoms were gone. He was ordered to keep his bed for two or three days—and then only sit up in his bedroom. No symptom of angina pectoris returned—and on the sixth or seventh day, the General would no longer submit to restraint. He came down stairs—dined in the parlour on fish—took his first glass of wine in good spirits—and, while drinking the second glass, he died as instantaneously, as if a cannon ball had passed through his chest!

God forbid that we should attribute any



part of this tragic finale to the treatment on which the patient was placed for disorder of the "DIGESTIVE ORGANS;" but we can only say that, if General B. died of this said disorder, we are totally ignorant of the nature of the complaint.

From the Transactions of the Medical and Chirurgical Society of London.

**CASE OF RUPTURE OF THE STOMACH PRODUCED BY VOMITING; WITH SOME OBSERVATIONS.** By J. N. WEEKES, Esq. Member of the Royal College of Surgeons, and House-Surgeon at St. Bartholomew's Hospital.

The following case of rupture of the stomach, accompanied with some unusual circumstances, having lately fallen under my observation, I have thought it may not be unworthy of the attention of this Society.

George Andover, æt. 34, had been liable for about two years to paroxysms of pain in the stomach. The pain usually continued for several hours, and generally went off with vomiting, and it returned at uncertain intervals, frequently of many weeks. Between the attacks the patient enjoyed tolerably good health. About Christmas last he vomited a large quantity of blood, which rendered him so feeble, that he was confined to his bed for five weeks. Since that time, his health has been much impaired, and the attacks of pain followed by vomiting have been more frequent.

On the evening of April 13th, he was brought to St. Bartholomew's Hospital, where I first saw him. He was then suffering great pain, extending from the epigastric region over the whole abdomen, and accompanied by nausea; there was neither tenderness nor tension of the abdomen,—the pulse was frequent, tongue clean. He had shortly before his admission drunk some shrub and water, to which he in great measure attributed these symptoms, and told me he had had a similar attack a week ago, after indulging in spirituous liquors, and that it went off with vomiting. On the following day the pain had subsided, there had been no vomiting, but he complained of nausea; the abdomen was distended by flatus, and he had frequent eructations,—the pulse was weak, tongue natural.

At eleven o'clock, P. M. he had a sudden attack of most severe pain. I was called to him about an hour afterwards, and found him groaning with agony at the pit of the stomach,—the abdominal muscles were hard and contracted,—the belly was neither painful nor tender on pressure,—his pulse was small and feeble,—he was extremely restless, and his countenance expressive of the greatest suffering. I instantly gave him sixty drops of tincture of opium, and as he found no relief they were repeated, but without benefit. He continued to suffer most acute pain for about two hours, when he was suddenly seized with violent vomiting. After this the pain somewhat

abated; there was no return of vomiting,—but he sunk rapidly, and died at four o'clock in the morning.

*Examination.*—On opening the abdomen, the stomach was observed to be flaccid and empty, and its contents, which consisted of a large quantity of dark-brown fluid, were effused into the peritoneal cavity, through a ragged opening situated on its anterior surface, and near the œsophageal orifice. The rupture extended from below the lesser arch of the stomach to near its cardiac extremity, and was about four inches in length. The three membranes were not torn equally, the rupture of the peritoneal extending an inch farther than that of the muscular or mucous coat. On the posterior surface of the stomach was a laceration, measuring three inches in length; and there were two or three small ones, from an inch to an inch and a half in length, at its great arch. These lacerations extended only through the peritoneal coat of the stomach, the muscular and mucous tunics remaining perfectly whole. The mucous membrane of the stomach was lined with a great deal of dark-coloured secretion, beneath which the membrane itself was of a deep red colour throughout,—its texture was softened and partially emphysematous. The stomach in other respects appeared healthy,—the liver was pale and softened,—the gall-bladder contained a calculus,—the structure of the spleen was unusually soft,—the other viscera were healthy.

In the eighth volume of the Society's Transactions, Dr. Crampton and Mr. Travers have described some cases of rupture of the stomach; in all these cases there had been ulceration of the coats of the stomach at the part which had given way.

Dr. Abercrombie, in an interesting paper in the Edinburgh Medical and Surgical Journal, 1824, has published some cases of this kind. Many of these cases differed in their previous history, but presented similar symptoms in the fatal attack. In some there had been occasional vomiting, gradual wasting and other symptoms indicating serious disease of the stomach; but in others the symptoms were slight and obscure, and the health was not obviously impaired. The fatal symptoms commenced with a sudden attack of most violent pain, referred to the epigastric region, and extending over the abdomen; sometimes, though not invariably, accompanied by vomiting. The abdomen was in some cases hard and contracted, in others distended and tender. The pain continued unabated, with rapid sinking of the vital powers, and death took place in a few hours. The stomach was found penetrated by ulcerations of various extent, articles of food and drink were found in the abdomen, and in some cases peritoneal inflammation had supervened. The stomach generally presented marks of long standing disease, as induration and thickening of its coats, adhesion to the neighbouring parts, and organic disease at the part which had given way.

The most remarkable feature in the pre-



ceding case, is the extensive rupture of the stomach, with so little disease of its coats; and in this respect it forms a striking difference to those cases hitherto related. The stomach presented no thickening nor ulceration at the part which was ruptured; the disease was confined to its mucous tunic, and appeared to be recent inflammation and softening of its texture. It may also be remarked, that the symptoms in this case were not such as generally indicate the existence of organic disease; there were considerable intermissions of the symptoms, the patient had enjoyed tolerably good health, and there was no emaciation.

In the lacerations of the peritoneal coat of the stomach, without including the other tunics, this case forms a striking resemblance to some appearances which the uterus presented, in a case of sudden death during parturition, described by Mr. C. M. Clarke, in the third volume of the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge. "In the fold of the peritoneum, which dips down into the pelvis between the uterus and the rectum, I observed about an ounce of blood; and upon that part of the peritoneum which covers the posterior surface of the uterus, there were between forty and fifty transverse lacerations, none of which were in depth above one-twentieth of an inch, and many were merely fissures in the membrane itself. They varied much in length, some measuring one inch, some two inches, whilst the length of others did not exceed the fourth part of an inch. The space upon which they were situated, extended from one side of the uterus to the other, and occupied the greater part of its whole posterior surface. The edges of these lacerations were thinly covered with flakes of coagulated blood, and there could be no doubt that the blood found in the fold of the peritoneum, had escaped from the lacerations. The muscular part of the uterus was perfectly whole."

The only case I have met with of rupture of the coats of the stomach produced by an act of vomiting, or rather, attempting to vomit, is recorded by Lallemand, and is described in the forty-ninth volume of the Dictionnaire des Sciences Médicales, Art. Rupture.

The patient had laboured under difficult digestion for five or six months, and had been much relieved by observing a strict regimen. After indulging her appetite to a greater extent than usual, she was attacked with uneasy feelings in the stomach, accompanied by nausea and inclination to vomit. She made violent but ineffectual efforts to discharge the contents of the stomach, and whilst suffering great agony, experienced intense pain, with a sense of tearing at the lower part of the belly; she uttered several screams, and fell down insensible. She sunk rapidly, and died in the night. On dissection, the cavity of the peritoneum was found full of half-digested food; the anterior and middle part of the stomach was torn obliquely from its small towards its great curvature, to the extent of five inches.

The edges of the rupture were thin, irregular, and presented no marks of disease. The three coats of the stomach were not torn to an equal extent, nor exactly in the same direction; the rupture of the peritoneal was larger than the muscular coat, and the mucous membrane was the least extensively lacerated. A mass of scirrhus, an inch and a half in extent, surrounded the pylorus. The other parts of the stomach were perfectly healthy.

From the Edinburgh Medical and Surgical Journal.

**CASE OF MOVEABLE CARTILAGES IN THE BURSA OF THE SARTORIUS.** By JAMES SYME, Esq. Lecturer on Surgery, &c.

I was lately requested by my friend Dr. Scott, to examine the knee of Master T. A., a stout very well formed boy, 15 years old.

The left tibia was considerably enlarged at its upper and inner part, over which the tendons of the flexor muscles pass to their insertion. This exostosis did not incommode the patient; but he complained of two moveable bodies, which shifted about under the tendons, and occasionally impeded the use of the limb. He stated that the enlargement of the bone had existed for several years, at least three, but that he had not noticed any mobility of the swelling until last winter.

In consideration of the inconvenience which the patient actually suffered, and the risk of farther mischief if the irritation were allowed to continue, we agreed that the bodies in question ought to be removed, especially as this could be done without any fear of those bad consequences which attend similar operations, when the large joints are concerned. I therefore desired the patient to bring them into the most favourable position for the purpose, which he did by completely bending the knee, and then pressing them from below upwards, so as to make them pass under the tendons and project distinctly on the fore part of the tibia, a little below the tuberosity. Having fixed them in this situation, and at the same time drawn the skin as much laterally as possible, I cut down upon the larger of the two, endeavouring to divide at once all the intervening parts, which was somewhat difficult, owing to unusual thickness of the fibrous textures. The pressure being continued, forced it to escape through the opening, with a little synovial fluid, and the smaller one immediately followed. The lips of the wound were retained in contact by the twisted suture, and healed without any trouble.

The larger of the two substances removed was about the size of a common marble, the other was smaller by two-thirds. Their surface was smooth, and possessed a pearly lustre. Their shape was approaching to round, but irregularly nodulated, so that they had a striking resemblance to the roots of the *Bunium bulbocastanum* (Pig-nut.) They had a tough closely adhering capsule, a fibro-cartilaginous consistence, and a bony nucleus.

I am inclined to publish this case by the



hope that it may assist to throw light on one of the most obscure subjects in surgical pathology, viz. the formation of moveable cartilages.

It seems to me particularly deserving of attention, that the exostosis existed long before the cartilages; which must therefore be regarded rather the effect than the cause of this effusion of the bone. If the very distinct account given by the patient could leave any doubts as to this point, they would, I think, be removed by the present state of the other knee, where a considerable exostosis can be felt at the insertion of the semi-membranous—though there is no vestige of a moveable cartilage.

Sir A. Cooper has observed, that exostosis occurs most frequently at the attachments of tendons, and attributes this to the irritation resulting from inordinate contraction of the muscles. This opinion derives support from the well-known anatomical fact, that the processes of bones always increase in strength along with the muscles attached to them. Another argument may be drawn from several cases which have come under my care of exfoliations from the ischium and pubes at the origin of the adductors of the thigh and flexors of the knee. I may take as a specimen of these, that of a herring-curer, who seven years ago worked a whole day, according to the custom of his employment, with his feet widely separated, alternately stretching himself to the utmost, and then stooping with his knees straight, a position which of course caused a violent extension of the flexors of the knee, viz. the *Biceps*, *Semi-tendinosus* and *Semi-membranosus*. In the evening he complained of an uneasy feeling of fatigue in the right hip. This gradually passed into pain, and after a time was succeeded by the formation of an abscess, which was treated as a *fistula in ano*. Many abscesses formed subsequently, and for the most part prevented him from following his employment. Some small pieces of bone were from time to time discharged; but his surgeons having contented themselves with simply extracting them as they appeared, never struck at the root of the evil. When he applied to me there was a large abscess in the upper and back part of the thigh, and an opening just below the edge of the *gluteus maximus*, at the bottom of which I felt a piece of loose bone. Having evacuated the abscess I introduced a long straight bistoury into the sinus, and dilated it so as to admit my finger to the bone and ascertain that it lay between the flexor tendons. I enlarged the orifice of its containing cavity and then extracted it. It was about the size of half a sixpence. The patient very soon regained the use of his limb, and also his general good health. But some months afterwards he told me that the sinus still discharged a drop or two of matter, and that he occasionally felt a pricking pain in the hip. I probed the sinus and felt a small bit of bone, which was removed as the former one, but with rather more difficulty, owing to the small size and very firm margin of the opening between the tendons. After this the wound

healed directly, and the patient has continued perfectly well ever since.

From the Edinburgh Medical and Surgical Journal.

**DELINEATIONS OF THE ORIGIN AND PROGRESS OF THE VARIOUS CHANGES OF STRUCTURE WHICH OCCUR IN MAN AND SOME OF THE INFERIOR ANIMALS;** *being the continuation of Works already published on this subject.* By JOHN BARON, M. D., F. R. S., Physician to the General Infirmary, and Consulting Physician to the Lunatic Asylum at Gloucester, &c. London, 1828. 4to. pp. 56. Four Coloured Engravings.

To all those who take interest in the progress of the pathological inquiry, the hypothesis which Dr. Baron some years ago proposed to explain the origin of tubercles in the tissues of the animal body must be well known. That hypothesis, it may be remembered, is distinguished by assuming the facts, that tubercles are at commencement small vesicular bodies with fluid and transparent contents, and that these vesicular bodies are the same as the parasitical animal known under the name of hydatid. We say "assuming the facts;" for we never could perceive that the ingenious author had succeeded in demonstrating that tubercles were vesicular at any period of their growth; much less could we admit that these vesicles were of the same nature with the hydatid. Bayle indeed described the miliary tubercle as translucent or semi-translucent; and Laennec showed that this is merely the incipient or nascent state of tubercles which are afterwards found to become opaque and grayish. But in no case were their contents said to be fluid; and in no respect could they be compared to the hydatid.

In the lungs of the sheep and other animals, in like manner, we have more than once seen minute granular bodies, opaline and semi-translucent, but hard and cartilaginous in consistence. What these bodies, so minute, so hard, and so numerous, might have become, we do not feel competent to say. But neither from their present characters, nor from any other circumstance, did it seem probable that they had been or were to terminate in hydatid cysts or vesicles. In short, whatever be the ingenuity with which Dr. Baron studied to uphold his opinions and persuade his readers of their truth, nothing like accurate evidence was adduced; and they continued in the shape of an unsupported hypothesis, not requiring refutation, because never founded on the basis of fact; and never generally admitted, because in direct opposition to any accurate knowledge on the development and growth of tubercular disorganization.

Of the weakness of his hypothesis Dr. Baron appears himself not to be unaware. He nowhere positively states that he has traced the transformation from the vesicular or hydatidiform condition to the opaque, firm, and tubercular structure in the tissue of the lungs;



and it is only by applying to these organs, what he recognises in the liver, that he ascribes to this source the formation of tubercles in the human lungs. The evidence which Dr. Baron adduced in favour of his opinions was derived almost exclusively from the liver of the sheep, the rabbit, and others of the inferior animals; and whatever be the accuracy with which he describes the appearance of these growths, the changes which they undergo, and the effects which they produce on the health of the animals, they admit of little direct or useful application to the development and growth of tubercles in the lungs, either of the human subject or of the lower animals.

In the present work, which forms a sort of practical illustration of the two preceding ones, Dr. Baron undertakes to illustrate still more fully and forcibly his peculiar opinions on the generation of tubercles in the textures of the animal body. We do not perceive, however, that the application of that part of his theory, which pertains to the growth of hydatids of the liver, is in the smallest degree more immediate than before; or that Dr. Baron has succeeded in making any decisive progress in establishing the general accuracy of his opinions.

Premising that the delicate texture of the lungs presents greater difficulty to the distinct investigation of the morbid changes which take place in their substance than the liver, in which the slightest change, he contends, is easily distinguished; and maintaining also, that it is an organ more frequently diseased, he adopts it as the source of the illustrations now to be adduced. Notwithstanding this admission, he denies that the facts thus established are applicable to this organ only; and he reminds the reader, that he does not relinquish those views which induced him to maintain that the description which is accurate in relation to one class of disorganizations is equally applicable, *mutatis mutandis*, to others.

The first traces of tubercular deposition in the liver become visible, according to Dr. Baron, by two circumstances,—the unusual enlargement of the lymphatics, and the formation of minute vesicles,—generally conjointly, sometimes separately.

In a liver becoming diseased, the first thing which meets the eye is a manifest enlargement of the lymphatics, which occupy a larger proportion of the liver than natural, and which, though still transparent, soon become opaque white, and pearly coloured. A section of the organ at this period gives a mottled appearance, not unlike that of the section of a nutmeg, the ramifications of the lymphatics being opaque blue over the brown ground of the hepatic substance. As the disease advances, a great disproportion takes place between the new white deposit and the sound parts. The former greatly predominates; and ultimately the brown remains of the glandular texture of the liver are entirely removed, and an opaque whitish hard mass, which Dr. Baron terms

scirrhus, is left in its place. This is the course in the first kind of change.

The second is represented by Dr. Baron as originating in two modes; one, consisting in the expansion of the point of intersection where different branches meet; the other in the formation of a vesicle in the course of a lymphatic trunk,—in other words, the expansion of a trunk into a vesicle. The vesicle thus developed in either situation is at first small, but gradually enlarges.

“As it increases in size in every direction, a small portion of its circumference is seen like a transparent speck around the dark surrounding texture. This part becomes more visible as the body grows; and as its magnitude increases, the manner in which it dispossesses the true texture of the part where it is formed is beautifully seen. In the liver, where the glandular texture is divided and subdivided, these partitions may be perceived gradually expanding like a thin film or curtain over the increasing growth of the vesicle. After a time they are completely absorbed, and the boundaries of the disorganization become clearly defined.”

Of these two modes of disorganization described by Dr. Baron, the difference is that the former, that of the lymphatics, leads to a dense scirrhus texture without appearance of tuberculous disorganization; while the latter, that commencing by vesicles, forms circumscribed tubercles or tumours. When the two species of morbid action are combined, which is not uncommon, a compound structure partaking of the characters of both, is the result. The general accuracy of these statements is illustrated by the first, second, fourth, and fifth figures of the first engraving, as seen in the liver of the hog, and in the second, as seen in the human liver, and in the first figure of the second engraving as seen in the liver of the sheep. In the second figure of the same is seen this change of structure in the lung of the sheep, and in the third, in that of the horse. The description of the state of the lungs in the latter deserves particular attention.

“On examining the lungs (of a glandered horse) their healthy texture seemed at first sight but little changed. They retained their purplish hue, and their light elastic feel. On closer examination, a number of circular vesicles were seen; some being transparent, and others of an opaque yellow colour. Others had an oblong figure, and seemed clearly to have been formed in the course of transparent vessels, which, from their character and appearance, I took to be lymphatics. I endeavoured to ascertain this point by attempting to inject them with quicksilver: but I failed in my design.” In this account an omission, not altogether unimportant, is committed, in not stating whether the vesicles contained fluid, and in not ascertaining whether they were not mere ruptured or enlarged cells,—a change of structure not uncommon in the lungs of the glandered horse.

With the view of illustrating more forcibly



the formation of tubercles, Dr. Baron narrates the particulars of an experimental investigation which he performed on a family of young rabbits, under the influence of confinement and improper food. These animals when first shut up, about the end of April 1825, were perfectly healthy in appearance. One died on the 3d June: and on the external surface of the liver were found many transparent vesicles about the size of a pin's head, with distinct enlargement of the superficial and deep-seated lymphatics. On the 12th, died another rabbit, in which the liver was light coloured, enlarged, and studded with tubercles semitransparent and opaque, firm and yellow, with similar disease of the lymphatics. In a third rabbit, which died on the 16th, the morbid process was still farther advanced. One lobe was universally occupied by miliary tubercles, projecting from the outer surface, so as to give it a granular appearance, and so numerous as to disguise the hepatic structure in an irregular straw-coloured mass. To the lower surface of the liver was attached an hydated about the size of a hazel-nut. In a fourth rabbit, which died on the 18th, the liver contained many large tubercles, though fewer than in the last case, and more detached, the interstitial substance being sound. To the lower surface of the organ were attached several hydatids not quite globular, becoming opaque, and with contents like calves'-foot jelly.

At this period Dr. Baron removed from the place in which their companions died, three survivors, with all the external signs of labouring under the same disease which had already been the cause of the mortality. They were emaciated, with tumid belly, and scaly, harsh, unhealthy skin. Their new abode was kept dry and clean; and they were fed chiefly on bran and oats, with a moderate proportion of clover and dandelion.

"About ten days after the change had taken place, I killed one of them. The animal had increased a little in flesh, but the other external signs of disease existed, and the progress of the internal disorganization had not been arrested. The liver was very much enlarged, and there was a greater development of the whole of the lymphatic system of the organ than in any other of the former instances. There was also a very great number of tubercles of different sizes and different stages of their progress, so that scarcely any part of the liver remained in a sound state. In Plate III. Fig. 2, will be found a representation of this diseased part. I present it to the reader, to show how far change may take place, and yet the healthy condition of the part be restored. In order to put this point to the test, I killed the fellow of this last mentioned rabbit on the 5th August. It had been fed exactly as I have already described. It was very much improved in health; and on examining the liver it was found comparatively in a sound state. Its colour was natural; it was not much enlarged; and there were only a very few tubercles discernible in it.

"So far as the foregoing facts lead us, they

are interesting both in illustrating the origin and progress of the disease in question, and in giving us some hints respecting their treatment. The evidence that all the rabbits were diseased, is as strong almost as it can be. They were all affected with the same external signs; and till their diet was changed were all falling under the influence of the disorder. The lives of the three that remained were obviously saved by this change. In the first that was killed after it had taken place, the health was improved, but the local disease had not been arrested. In the second, not only was the general health improved, but there was also great reason to believe that a considerable removal of the external disease had been effected.

"I trust it will not be thought that this inference is overstrained; the traces of the disorganization of the liver being discernible, and all the other appearances of the animal denoting that it was diseased like its companions."

These morbid changes, which Dr. Baron afterwards traced in the lungs of the sheep, those of the horse, and in the liver of the hog, he ascribes originally to the agency of the lymphatics, which he maintains may be seen effecting in the bodies of the lower animals that transformation, the result of which only can be recognised in the human subject. Having established this point in relation to the liver in these animals, he applies it to the lungs of the human subject, and adduces in confirmation the case of a man cut off under diabetic symptoms, in whose organs tubercles were found extensively in various stages of development. "The tubercles varied in size as well as in condition; some were perfectly transparent and not larger than the head of a pin; others were consolidated and about as large as a garden-pea. In the lungs, liver, and spleen, irregularly shaped scirrhous masses were formed by the aggregation of minute tubercles and by the enlargement of the lymphatics of the organ."

A still stronger confirmation of his opinions Dr. Baron endeavours to derive from the successive changes which take place in the progress of ovarian disease, two cases of which he narrates. In these, indeed, some of the vesicles attached to the Fallopian tube were transparent, and others opaque, or approaching to opaque and solid. In this it is well known there is nothing uncommon. The application of the fact is, however, both different from what is commonly received, and perhaps may in some cases be the true one. The following statement may be given as the general inference which Dr. Baron derives from his several facts and arguments:—

"In the lungs, the primary condition of the disorganizations is not less illustrative of the above description. The clear and untransformed vesicles may be seen here and there interspersed through its substance, or studded over its surface. In this state, unless they happen to be formed in great numbers, and at no great distance from each other, they cause but little interruption to the function



of the part; but things do not remain long in this condition. A change, both in the diseased structure and the portion of lung connected with it, soon takes place; and, subsequently, all those progressive alterations occur which I have elsewhere endeavoured to describe."

Very much in the same manner he represents the occurrence of scirrhus degeneration to take place. One of the simplest varieties of this kind of morbid structure he describes as taking place in the following manner.

"The lymphatics of the first part show signs of disease. They enlarge and become opaque. The organ in which the disease occurs, if examined at the time, will exhibit a reticulated appearance. The size of the interstices depends of course upon the original distribution of the lymphatics. But as the disease advances, there is a corresponding diminution of the interstitial matter, arising from the approximation of the morbid parts. Ultimately they seem to coalesce, and thereby to form the dense, firm organization called scirrhus. This is perhaps the simplest form of the disease. One of the most obvious and common modifications of its character arises from the development of tubercles in connexion with the changes described."

In these views we willingly admit, as we have before done, there is much ingenuity. They tend to simplify, in a remarkable degree, whatever ideas we have entertained on the formation and progress of morbid structure. They enable the pathologist to form a distinct and tangible idea of that which was formerly confused, vague, and impalpable. They present him, in short, a sure resting-place, on which he may fix his wandering thoughts in an inquiry arduous, complicated, and obscure; and they encourage him to think that he at length sees clearly explained what was before dark, confused, and unintelligible. More than this, however, they do not accomplish. The premises, when carefully traced, do not legitimately and directly lead to the conclusion. When divested of every bias, and of all unnecessary circumstances, we examine the relation between the vesicular or hydatid bodies found in the livers of the lower animals, and the tubercles which in the lung of the human subject constitute the pathological cause of consumption, it is impossible to perceive that the relation is that of sequence, or of cause and effect. Conceding to Dr. Baron for the sake of hypothesis the assumption, that what is true of the former must be true of all other forms of disorganization, which, nevertheless, is a principle greatly too general for the present state of science, it is impossible to allow that the application holds good in the case of pulmonary tubercle.

On a former occasion we took the liberty of adducing such facts and arguments as the question then seemed to require, in order to place its actual merits in the true light.\* With

\* *Medical and Surgical Journal*, Vol. xix. pp. 298, 299, &c.

this subject, therefore, it is unnecessary again to occupy the time of the reader. But it is surely manifest, from the fair account which it has been our study to give of the inquiries and arguments of Dr. Baron, that between the fact with which he sets out generally,—the conversion of the vesicular cyst of a sheep's liver into a purulent one, or afterwards a solid body, and the conclusion at which he arrives, that the pulmonary tubercle is originally a vesicular cyst of the same kind,—a chasm abrupt, immense, and impassable is left. Even the circumstance of tubercles being found in their origin transparent, a point never doubted, and explained, as we conceive, by Laennec, is not applicable to the argument. These bodies, instead of being vesicular and containing fluid at this period, are solid, firm, and cartilaginous in all the instances hitherto observed accurately. Nor has Dr. Baron yet adduced positive or satisfactory evidence to the contrary.

The train of argument employed by Dr. Baron is further corrupted by another fallacy, in the circumstance of regarding the hydatid as susceptible of the changes which he describes. If the cysts which Dr. Baron finds in the liver of the rabbit, the sheep, and the hog, be really hydatids, that is, animals propagated according to a certain law, so far as we are at present aware, no well authenticated facts lead to the inference, that these fluid contents undergo the changes which he represents to take place.

On the influence which Dr. Baron ascribes to the agency of the lymphatics in effecting these changes, we do not feel competent to offer any opinion. In its present state the matter rests very much on his testimony as an accurate observer. To every one, however, who knows anything of the nature of evidence required in support of pathological opinions such as the present, it is obvious that nothing short of injection should satisfy us as to the fact, that the morbid change actually originates in that system of vessels. The reasonableness of this condition we trust Dr. Baron will not himself dispute; and if he establishes this point it certainly must go so far in demonstrating the truth of one part of his hypothesis.

The objections now adduced apply solely to the inferences which Dr. Baron causes to flow from the facts which he advances. The latter possess much actual merit, whatever be the ultimate fate of the hypothetical opinions which they are made to support. To this merit we have more pleasure in bearing testimony, in so far as we feel ourselves compelled to withhold our assent from the conclusions derived by the author. Had he divested his mind of the hypothetical prepossessions by which it has been biassed,—had he confined his inquiries to the simple phenomena observed in the rise and progress of the organic changes which form the subject of investigation, Dr. Baron would have formed a more valuable accession to the stock of facts accumulated on this head than his work in its



present form does. With this deduction even, it cannot be doubted that the facts which he establishes throw some interesting illustrations on the effects which diet and regimen exercise on the health of animals, and on the intimate atomic structure of their organs.

From the London Medical and Surgical Journal.

# PRACTICAL OBSERVATIONS ON THE USE OF THE COLCHICUM AUTUM- NALE.

The following communication was sent to us by a very intelligent and diligent medical practitioner. As the remarks are the result of the personal observation of a gentleman of high respectability, who has been upwards of twenty years actively engaged in the profession, they form a valuable testimony in favour of this potent remedy, and cannot fail to be acceptable to our readers:—

I will endeavour to answer your queries, respecting the use of colchicum, and whatever I say will be from my own experience and observation; but you must bear in mind that I am writing about a favourite remedy.

1st. What is the best form of administration?

The form which I have used for some years past is a tincture, in the proportion of ℥iij. of the dried *seeds* (not bruised) to ℔j. of proof spirit; digest for fourteen days and strain. In this preparation of colchicum, I feel the most confidence.

2d. To what extent have you ever carried it in a constitution of ordinary powers?

Fifty minims of the above tincture every four hours, and that continued for three days. My general dose is gutt. xxx. every five hours.

3d. Have you ever depended upon it solely in cases of severe inflammation of any important viscus or tissue?

Yes—I have administered it in many cases of severe pleuritis, and it generally succeeds in removing the disease without any other aid. Should the symptoms run very high, I have recourse to one large bleeding. In other cases, when there is pain remaining after the acute symptoms are over, I apply a blister over the part affected; but either bleeding or blistering is so seldom necessary, that I should find some difficulty in calling to mind a case where I have thought it necessary to employ them. If success in practice be any criterion of the efficacy of remedies, my plan may lay some claim to notice, for I have not lost a single patient from pleuritis for many years past, and, in a practice averaging nearly 3,000 cases annually, including all kinds, there must be many of that disease.

4th. What cases is it most suited to?

Pleuritis, particularly of the sub-acute form—acute rheumatism—gout—in the early stage of inflammatory fever, and in the commencement of inflammatory diseases in general, with the exception of gastritis and enteritis.

5th and 6th. What are the chief cautions required in its use, as respects the patient, or in its action? and what are the symptoms of an over dose, and how are they to be treated?

The unpleasant effects which occasionally follow the exhibition of colchicum, are, nausea and purging, with a feeling of general debility or sinking which the patient complains of, accompanied by a peculiar, moist, whitish fur upon the tongue, which I can scarcely describe; and a disagreeable taste in the mouth, also peculiar.

I have never carried its exhibition further than the production of these symptoms; when they arise, I direct the patient to abstain from the medicine until they have subsided, and then, if the disease be not removed, its use is resumed cautiously, and in smaller doses. During the presence of the above named symptoms, the disease, for which the colchicum was given, generally gives way, and I have never had occasion to have recourse to antidotes. After its use, tonics are very grateful to the patient.

Colchicum produces very different effects in different constitutions; in some it purges severely; in others, the bowels become confined during its use. Our friend R., had acute rheumatism affecting the diaphragm. I ordered him gutt. xxx. of the tincture every five hours, in a little water; after three doses the pain abated materially; three doses more produced nausea, purging, and the other etceteras which I have mentioned; the medicine was left off for a time. When the effects had disappeared, a little uneasiness and pain being still felt, a few doses more, given cautiously at longer intervals, accomplished his cure. At the same time, a female patient was suffering under a severe attack of lumbago; she took the tincture in the same doses and intervals; the pain was relieved by a few doses, and she got well; but in this instance the bowels became confined under its use, and it was found necessary to administer a purgative to procure alvine evacuations. In both the above instances, at the time the patients commenced taking the medicine, the bowels were regular.

As a general rule, I wish to have the bowels acting freely during the exhibition of colchicum, and if the remedy be not sufficient in itself to produce that effect, I unite it with the sulphate of magnesia.

T. G.

From the London Medical Gazette.

## CYSTS WITH OSSEOUS PARIETES, DE- VELOPED IN THE SUBSTANCE OF BONES.

M. Dupuytren has more than once called our attention to these tumours, which he was the first to describe accurately. If, he observes, fibro-cellular tumours often develop themselves in the substance of the soft parts, and more especially in the uterus, similar tumours may also be found occasionally in the substance of bones. A contusion, or some other accident, may form the germ of such affections, and when once they have commenced, their increase is easily to be conceived. They are united to the neighbouring parts by a pedicle, which transmits their nourishment and life; and



their growth is at once the consequence of this connexion, and the cause of the separation of the osseous laminae. But, although it is easy to conceive that a solid matter interposed between the bony cells may, by its progressive growth, separate and distend them to a considerable extent, it is more difficult to comprehend how such cavities can be developed, containing only a fluid, and how this fluid can act with so much power as to separate and distend the cellular structure of a bone: nevertheless, the fact is so. M. Dupuytren has observed several examples of this kind of tumour, either in the extremities of the long bones, in the bodies of the vertebrae, or still more frequently in the bones of the face, in the upper or lower jaw.

These cysts contain either a solid or a fluid matter. The following case is a remarkable instance of the former.

**CASE I.**—It is now about twenty years ago that a young man presented himself at the Hotel Dieu, on account of a large tumour which swelled up his cheek, and occupied the right horizontal portion of the lower maxillary bone. This young man had been destined for the church, but had been refused admittance into the seminary, in consequence of the above tumour. M. Dupuytren examined it with attention, and was convinced that it was seated in the bone itself. When pressure was made upon the parietes of the cyst, which was of an oval form, he felt a slight crepitation, similar to that which is experienced in rubbing a piece of dry parchment between the fingers. The knowledge which the professor had acquired of the existence of these tumours with bony parietes, the absence of any fungous growth, or lancinating pain, together with the excellent state of health and the youth of the patient, joined to his ardent desire to get rid of the disease—all these circumstances determined M. Dupuytren to attempt its removal, and to induce him to believe that this was not a case of osteo-sarcoma.

He therefore made a large incision at the labial angle,\* which was prolonged in the direction of the jaw, and carried within the mouth. The bony cyst was divided, a small quantity of reddish serosity escaped, and a fibro-cellular mass was perceived, which was partly extracted with a pair of pincers; suppuration destroyed the rest; and by means of repeated injections, the cure was completed, the edges of the cyst approaching each other little by little, so that the patient retained but a very trifling deformity.

**CASE II.**—About three months ago, the sister of a physician inhabiting the neighbourhood of Tours, a young woman of from 20 to 30 years of age, handsome and robust, came to consult M. Dupuytren, on account of a tumour, the size of a hen's egg, which was situated on the right horizontal branch of the lower jaw. M. Dupuytren having examined it, and finding that there was neither lancinating pain nor

varicose degeneration, and also remarking the feeling of crepitation on pressing the parietes of the cyst, assured the patient that it was not a case of osteo-sarcoma, an opinion which had been previously entertained. Delighted with a prospect of a cure, she entreated M. Dupuytren to perform the operation which he had declared to be necessary. The tumour projected more within the mouth than exteriorly; it pushed the tongue out of its situation, and its growth appeared to have been determined by the incomplete extraction of a carious tooth. An incision was made within the mouth, upon the surface of the cyst; and upon opening into it, a great quantity of bloody serum escaped, but at the bottom, a solid mass was perceived, which was extracted, and found to be perfectly analogous to adipocere: it was so in fact—probably arising from the change produced on the animal matter of the food, which had penetrated the cyst through the alveolus of the tooth, and which had become so metamorphosed during its long stay within the cavity. A few injections, and poultices to the cheek, a bleeding, and a rigid diet for some days, were alone necessary to effect the cure. This patient is perfectly free from every vestige of tumour or deformity.

**CASE III.**—The report of the above successful case brought another young woman to the Hotel Dieu, a short time ago, affected with a disease, to all appearance similar, and who therefore hoped for a cure. In this girl the tumour was also oval, and about the size of a hen's egg; it was situated in the ascending branch of the lower jaw, on the left side. Its growth had been slow, without any lancinating pain, or change of colour in the skin. The tumour was most prominent outwardly, and its position rendered a different mode of operating necessary. The sense of crepitation was as distinctly felt in this, as in the two former cases, and several persons who had examined the tumour had felt it;—however, the number of persons who handled the tumour caused this crepitation to disappear; but M. Dupuytren, being convinced that he had felt it, attributed its disappearance to the constant and frequent application of the thin parietes of the cyst to the parts contained within it. On the 11th of July the operation was performed: the crepitation which had disappeared was again manifest, arising probably from the parietes of the cyst having reacquired their elasticity. An incision, about an inch in length, was made along the posterior edge of the masseter muscle, beginning some lines below its middle. In order to avoid wounding the vessels and the fascial nerve, the incision was continued down to the angle of the jaw; the edges were then separated, and the cyst was perceived, covered by a membrane which M. Dupuytren conceived to be serous, and which was soft and velvet-like to the touch. The whole surface was smooth and even. A stroke of the knife was then made across the bony cyst: a reddish bloody serum immediately escaped in abundance; a plug was afterwards introduced between the lips of the wound to keep them

\* This is the only case in which Dupuytren has ever divided the labial angle.



apart, and emollient injections were made into the cavity, a poultice applied to the cheek, and the patient was ordered to be bled in the arm, if necessary. Up to the present time, every thing is going on well—the cyst is suppurating, and the patient is free from pain and fever.

This case has given M. Dupuytren an opportunity of explaining the diagnostic sign of these tumours, and to establish the marked distinction which exists between them and the osteo-sarcoma, with which they might be confounded upon a superficial examination. The osteo-sarcoma is announced, from its very commencement, by lancinating pains, by a varicose tumefaction, by the participation of the neighbouring soft and hard parts, by fungous growth, and by the inequality of its surface. In these tumours, on the contrary, the neighbouring parts do not partake of the disease; the surface of the cyst is smooth and equal, and its growth is without pain; the osteo-sarcoma grows rapidly; the tumour above mentioned increases slowly. The osteo-sarcoma is internally mingled with bony fragments; which are never met with in these tumours. As to the crepitation, it is never observed in the manner above described in the osteo-sarcoma; whereas it is a pathognomonic sign in the cases alluded to: it resembles that which M. Dupuytren has remarked in those tumours situated half above and the other half below the ligament of the carpus; with this difference, that, in that case, the crepitation proceeds from the striking of one against the other—the upper one displacing the lower, or *vice versa*.—*La Clinique*.

From the London Medical and Surgical Journal.

#### REMARKS ON THE CIRCULATION OF THE BLOOD.\* By C. E. LUCAS, M. D.

The only mode of vital action of the moving fibre, with which we are acquainted, is that of contraction, derived, in some way, from the nerves. That the blood-vessels are endowed with this power, which, from its similarity to that of the muscles, has been called muscular power, has not only been generally admitted, but has recently been proved, by Dr. Hastings, in his work on Bronchial Inflammation, by a body of evidence perfectly irresistible. Assuming, then, the existence of this vital action, I will only observe, that, though possessed by all the vessels, it is more strongly evinced by the capillaries.

\* Most of our readers are, probably, acquainted with Dr. Lucas's very ingenious and useful work "On the Principles of Inflammation and Fever," wherein he discusses the subject of the present essay at some length, and applies his views of the circulation to the pathology of those diseases. Those who have not read that work, and who feel interest in these subjects, would find themselves well recompensed for the time devoted to its perusal.—*Editors*.

VOL. II.—3 N

But this vital action of the vessels receives the support of another power, of great importance in the maintenance of the circulation—namely, the mechanical one of elasticity, which is inherent in their structure. This, like the former, differs in its relative proportions in the different orders of vessels, being found to predominate greatly in the larger arteries. The importance of this power seems by no means to have been duly appreciated, and its office, even in the circulation, is but little understood. These two powers of the vessels acting in unison with, and in subservience to, the vital action of the heart, are mainly conducive to the support and regulation of the circulation, the varying conditions of which are only to be explained by this active cooperation; though the mere fact of their existence may be deemed sufficient evidence that the vessels cannot be passive instruments in that function.

It is then with surprise that I find your very able correspondent, Mr. Davies, in his "Principles of Physiology," contending for the exclusive action of the heart, and denying all active participation of the vessels in the circulation of the blood. This I understand him to do on the grounds, that, first, the heart is fully equal to the task, alone; and, secondly, that the exertion of a contractile power on the part of the vessels, beyond that of an uniform accommodation to their contents, would impede rather than promote the circulation through them. This, like every other question in physiology, is best answered by facts. For this purpose it might be sufficient to adduce the paramount one, that we find the blood in motion in the vessels, not only after the apparent death of the animal and cessation of the heart's action, but even after the absolute removal of this organ from the body. Dr. Philip (Vital Functions, second edition, Experiments, 24, 62, 63,) saw the circulation continue in the web of a frog's foot, and in the mesentery of rabbits, for a considerable time after the excision of the heart; and Dr. Hastings has observed the same in several instances. The circulation was, indeed, in these cases often irregular, "the blood oscillating in the arteries, and, in the veins, taking a retrograde course;" this, however, is so far from militating against the active influence of the vessels upon the motion of the blood, that it directly negatives the supposition that it might still be the effect of the last impulse of the heart, and is indeed precisely what must be expected to take place after the presiding influence of the heart is withdrawn. The familiar fact also of the larger arteries being found empty after death is a further proof of this power of the vessels over the circulation. But in the living body, also, we have proofs of the same. Mr. Hunter has observed an artery upon simple exposure to the air contract so as to become impervious; and Dr. C. Parry, though arguing on the opposite side, admits, that when a ligature is placed on an artery, or any other interruption to the circulation takes place, the blood moves in a retrograde current. In these instances



we find the vessels exerting a contractile power sufficient even to overcome that of the heart.

To disprove the second position, that the exertion of a contractile force on the part of the vessels would rather impede than promote the circulation, it will be sufficient to state, that as all reflux of the blood into the heart after it is thrust out by the ventricles is effectually precluded by the valves placed at the origin of the arteries, it is certain, that whatever pressure is made by the contractile powers of the vessels upon the column of blood within them must force it onward in the only direction upon it.

With facts then to show, that whatever force may be exerted by the vessels upon the blood must promote its circulation, and that they do exert a force, when deprived of all assistance from the heart, equal to the emptying of the larger arteries, can we doubt that these powers are applied to the support of the circulation; or, when we see them actually carrying on the motion of the blood after the cessation of the heart's action, can we believe that they do not assist it during its continuance? When indeed we consider the obstacles to the force of the heart, from the length and tortuousness of the vessels, the innumerable subdivisions, &c. we may well doubt whether the unassisted impulse of this organ alone would be equal to the propulsion of the blood through the whole course of the vessels. It is true, that, in the erect position of the body, little more would be required on the part of the heart than to throw the blood over the arch of the aorta, as the force of gravitation would be sufficient to carry it through the vessels of the trunk and lower limbs, and return it to its level at the right side of the heart. A greater power, however, would still be wanted to carry it through the upper parts of the body. But these advantages would be lost where the body was recumbent; and therefore, where rest was required to restore the wasted powers, more labour would be thrown upon the heart. If the blood also were brought round to the right side of the heart by the action of the left ventricle alone, then a cessation of this, as in syncope, would prove fatal; but if its motion be carried on by the vessels, then the failure of a supply of blood to the heart is effectually provided against.

From what has been stated, a strong presumption at least will arise, that the task of maintaining the circulation cannot be left with the heart alone. A further consideration of the subject will show that the vessels, so far from being passive in it, are very principal agents in carrying it on, with the important advantage also, that the assistance derived from them is, in a great measure, obtained without expenditure of vital power. To show this, let us consider that the heart throws the blood with a given force into an elastic tube, diverging into numberless channels, which again converge into two at the opposite side of the heart, and which, for the present, we will suppose to be there closed. It is plain, that

this system of vessels being filled, *the receiving vessels will be brought to that point of distention at which the resistance of its elasticity will balance the force of the heart*, whatever that may be. If we now remove the obstruction, and suppose that the blood enters at one side of the heart as fast as it is thrown out at the other, the matter is only changed by the establishment of a circulation—the distention remains the same, and must do so, as long as the force of the heart on the one side, and the resistance of the capillaries on the other, also remain the same. Of course, any variation in either of these opposing forces will produce a corresponding variation in the distention of the elastic coats of the artery; but the vessel must needs be in a state of distention—it must, under the given resistance of the capillaries, be filled beyond the point at which the medium of its elasticity would keep it, unless *this* be such as the force of the heart is unable to overcome; in which case it would be *relatively* incompressible. Now, if the heart had not power to alter the diameter of the arteries, all power of accommodation to a varying plethora of blood would be lost; no dilatation of the vessels could take place, and the increased volume could only be circulated by increasing the velocity of the current. We know that this is not the case. We know, however, that a necessity exists for a contractile effort of the artery immediately to succeed that of the ventricle, for, without it, it would be impossible to shut the valves on the side of the heart. To do this by the *vital contraction* of the vessel would require the exertion of a force which we are now supposing the heart to be incapable of, and which we can, with little reason, therefore, attribute to the vessels; for the resistance of the elastic force must be equal on either side of the scale. But, under a diminished plethora, the difficulty would be still greater, as it would be impossible for the vessels to contract upon their contents without the permanent existence of such a force as we have been describing. Such exertion, were it possible, must soon terminate in fatal exhaustion of vital power; for it is to be observed, that the necessity for it would increase with the inability of the system to support it. It is indeed probable that it is in this way that hemorrhage proves fatal.

From the foregoing considerations, we might conclude that the circulation requires a settled preponderance of the power of the heart over the resistance of the elastic structure of the vessels. But we have surer grounds to go upon; we have facts to prove that such is actually the case, and that in a healthy state of the circulation the vessels are kept in a state of forced distention. In Dr. Parry's work on the "Arterial Pulse," it is abundantly proved by a number of experiments, that, in sheep and horses, the circumference of the arteries was diminished above one-fourth after death. As the exposure necessary to the measurement of the vessels was generally followed, after a time, by some contraction, the fallacy, if any, arising from this



cause, tends only the more strongly to confirm the result of these experiments. It is curious that, having ascertained the fact, Dr. Parry should not have deduced the important advantages derived from this distention of the arteries in the steady, permanent force thus brought to bear upon the circulation. Some idea of the amount of this force may be formed by the vehemence of the first gush of blood from a wounded artery, and which is only to be explained by the united pressure of the elastic force from all sides being directed to the point from whence the pressure is removed, and which obviously could not take place were not the arteries in a state of forced distention. The experiments upon which Mr. Davies has arrived at a contrary conclusion are, obviously, in error, by comparing the vessel in the living body with its measure when *injected* after death. Now, the question is not as to the distending power of the injecting syringe, but whether the measure of the vessel during the circulation exceeds that to which it is brought after death by its elasticity. By this arrangement, then, of the relative forces of the heart and vessels, the effectual support of the circulation, by a power not subject to exhaustion, is provided for, and which admits at the same time of the greatest latitude of fluctuation in the fulness of the vessels compatible with life, an arrangement perfectly consistent with the wise economy of nature.

Thus, the aorta and its branches being distended to the point at which their resistance balances the power of the heart, will react upon the column of blood, by their elasticity, (with a force equal in the first instance to that of the distending power, but declining with the diameter of the vessel) thereby at once shutting the valves behind, and propelling the blood forward in a continued current. And here we may ask, whether the equal flow of blood in the capillaries does not show that it is impressed with an equal force, or nearly so, during both the systole and diastole? The jerking stream from a divided artery will form no contradiction to this, as the first gush of blood will empty the vessel so far as to remove at once all propulsive influence of the elastic force upon the current, and make it dependent on the heart alone. We may conclude, then, that the blood flows through the arteries in a continued stream, and, consequently, that the quantities passing out during the systole and diastole of the heart will be determined by the time they respectively occupy. Thus, if the diastole occupy double the time of the systole, and the latter send forth two ounces of blood, it is plain that the diameter of the vessel during the former will be reduced by the displacement of two-thirds of two ounces of blood. The return of the systole will restore the vessel to its previous state of distention, one-third of the blood sent out by it passing on, and two-thirds restoring the lost diameter of the vessel. Now if we look at the capacity of the aorta, even in its undistended state after death, we shall at once

see to what small extent the quantity above stated can raise its diameter. How then shall such dilatation be visible in the distant arteries? We cannot expect to find it so beyond the root of the aorta, where we know it may be seen. But, although the pulse be not thus sensible *to the eye*, in the smaller arteries, yet the declension of impulse upon the blood, during the diastole, will make the succeeding increase of it, upon the return of the systole, sufficiently so *to the touch*, especially when the diameter of the vessel is narrowed by the pressure of the finger.

The question of the amount of the influence of comparative vacuum at the heart, over the venous circulation, will call but for little observation here. The supposition of Dr. Barry, that the blood returns into the auricles of the heart during inspiration only, is sufficiently refuted by the fact of the alternate contraction of the auricles and ventricles, and of the want of all concordance as to frequency and duration between the respective movements of the heart and lungs. When we are told that "the blood passes through the greater veins during inspiration only," we should also be told where the *vis a tergo*, which is so manifestly impelling it through the smaller, terminates; as its effects ought, on the contrary, to become more visible by the increasing velocity of the current as its channels become narrowed towards the heart. As, however, the resiliency of the lungs, whatever it be, must operate in relieving the internal parietes of the chest of so much of the pressure of the atmosphere, which must be extended also to the heart and great vessels as being within that cavity yet external to the lungs, it must, *pro tanto*, assist the return of the blood into the cavities of the heart; and if this advantage be further increased by mechanical enlargement of the sinus venosi during inspiration, as stated by Dr. Barry, the effect will be more considerable. But, although we shall not find in this arrangement the paramount influence ascribed to it over the venous circulation, we shall yet find an ample vindication of its utility, in the support it is calculated to afford to the important functions of the thoracic organs—to the circulation in the support it will yield to the heart at all times, and particularly under dangerous exhaustions of the vital power—and to respiration, in the complete relief of the moving powers of the chest from all exertion during the act of expiration.

From the London Medical and Surgical Journal.

CLINIQUE DE L'HOPITAL DE TROYES  
—PERIPNEUMONIES GANGRENEUSES.—*Observations on Gangrenous Peripneumony.* By M. PIGEOTTE, Physician to the Civil Hospitals and Prisons of the Town of Troyes.

No subject of inquiry is more interesting to the medical practitioner than that which relates to the numerous variety of external causes contributing to give rise to disease. With few exceptions, medical topography, the influence



of the seasons on the human constitution, the state of the weather, the course of the wind, and other meteorological observations, are subjects which have been very much neglected by modern practitioners. These are causes which never cease to act on the human system, and whose influence tends continually to modify its functions. The diseases of every country have their peculiar seasons, and the characters of each vary considerably according to the different circumstances connected with the season in which it prevails. If we examine minutely the general causes of disease, we shall find that a very great majority of the maladies presented to our observation owe their origin to the numerous changes which take place in the state of the atmosphere, or to the certain conditions in which it exists at particular times and seasons. The experience of mankind generally, and the lessons conveyed from one generation to another, have taught them to choose those articles of food which have been found least pernicious to the system. Owing to this, internal causes of disease are, in some measure, avoided. But the action of external causes, physically allied to the animal body, never ceases to modify its functions and to bring about changes in its condition, varying in degrees from mere predisposition to disease, to the total destruction of life. If the peculiar characters of any malady depended entirely, or chiefly, upon circumstances connected with local situation, the profession, generally, might not find that degree of interest in devoting their attention to that malady, which those would who are likely to be called upon to apply their remedies to it; but it should not be forgotten that, however peculiar the circumstances attending a local situation may be, many other situations, attended by analogous circumstances, are to be found; and every practitioner is liable to be called upon to use his judgment founded upon this analogy. But various other external causes, not immediately dependent on local position, exert their influence on the system, and form very interesting subjects of medical inquiry. These, the author of the essay at present before us has not altogether neglected. He traces the origin of a very fatal disease of the pulmonary organs to a long succession of external causes acting on the system, and bringing it ultimately into that state most favourable for receiving the attack of the malady.

The wind continued to blow from the south and the south-east during all the summer, the heat was very powerful, and although rain fell in abundance, the atmosphere was not much refreshed thereby. The heat continued until the middle of September, when the wind became very variable, and the rain, which continued to fall, rendered the nights, the evenings, and the mornings very cool. The wind blew from the north on the first days of October, and the weather became dry without being cold. The season continued as fine as could be desired until the end of the month, when it became all at once quite autumnal;

the evenings and mornings became foggy, the wind blew with great impetuosity from the north-west, and frost commenced. During the month of December, the temperature was cold; the wind from the north, north-west, and west, blew constantly, attended with frost, with cold rain, and with very thick and fetid fog. The plain, on the middle of which stands the town of Troyes, was not the only place exposed to this weather; the same temperature was observed at the time by the physician to the hospital at Langres, and by the meteorologists at Paris.

The weather continued much the same throughout the winter. The cold was very intense, and the atmosphere never ceased to be humid; the wind blowing at different times from the north, north-west, and west, until the month of March, when it settled in the north. The humidity with which the air and the earth had been so long impregnated now gave way to sharp, dry, cold weather.

The diseases observed during the summer presented nothing remarkable in their appearance; they consisted chiefly of gastric bilious fevers, of double tertian, of erysipelas, of gastric pains, of bilious fluxes, and, towards the termination of the season, of adynamic dysentery among the military. Towards the middle of October, the air having become cold, and the fogs prevalent for some days, catarrhal affections of diverse forms made their appearance, such as pain in the ears, swelling of the glands of the neck, and rheumatic pains in the muscles of respiration and in the joints. But towards the end of November many cases of inflammation of the respiratory organs presented themselves at the civil hospital under M. Pigeotte's superintendence, and the characters of this inflammation were so unusually severe as to fix his particular attention. In addition to symptoms of inflammation of the pleura and lungs, often of both sides, which manifested themselves immediately after the invasion of the malady, there came on, on the second or third day, those "of a morbid state, known by the ancient physicians under the name of *putrid*, and of *adynamic* by the moderns." Soon after these made their appearance, the inflammatory symptoms disappeared, or became much less evident than at first. The adynamic symptoms increased very rapidly, and the patients generally died before or towards the end of the first week. No remedy which was tried appeared to make any impression on the disease, or do any thing to prevent, or even retard, the total extinction of the vital forces. On examining the bodies after death, the pleura and lungs were found in a sphacelated state, to an extent more or less considerable. Those parts of the lungs which were not gangrenous presented a very compact texture, and the red colour common to the first degree of inflammation of these organs; or they presented a state of very remarkable softness and flaccidity.

During the months of December, January, and February, M. Pigeotte continued to meet



with this remarkable species of pleuro-pneumony in the wards of the hospital, as well as in the town, among all classes of society. The disease prevailed also in the suburbs to the south and south-west of Troyes, as well as in a neighbouring village, which is situated amongst numerous stagnant pools, and which is enveloped during three-fourths of the year in constant humidity.

M. Pigeotte relates six cases as examples of the plan of treatment pursued in this epidemic, and of the morbid appearances discovered on dissection. We shall give an abridgment of two or three of these. That nearly all the patients should die under such inefficient treatment as was here adopted, is nothing wonderful; indeed it would have been much more wonderful had they recovered.

Pierre Nicolas Berthan, aged 44, was suddenly seized, on the morning of the 27th November, with a cold shivering, which lasted three quarters of an hour, attended with cephalalgia, particularly over the eye-brows, and general pain. These symptoms were succeeded by excessive heat, which terminated about eleven at night in very abundant perspiration. The fever soon increased, accompanied with cough, without any expectoration, and an acute pain in the left side of the chest, just under the breast. The patient continued in this state during the day and the night following, and he entered the hospital on the morning of the 29th. The disease then manifested the following symptoms:—Cheeks of a reddish violet colour; eyes shining and humid; restless looks; more heaviness than pain in the head; tongue charged with a thick coating of a lemon-yellow colour; bitter taste in the mouth; respiration short and laborious; pain in the left side of the chest during inspiration; pulse quick and frequent, but not hard. *Fifteen grains of ipecacuanha and one grain of tartar emetic for two doses. Infusion of elder flowers with oxymel; abstinence.* State of the bowels at this time not noticed. However, the emetic produced vomiting twice, and two intestinal evacuations. *Quieting potion in the evening.* He continued very restless during the night; the cough and pain in the side, which appeared to have ceased after the emetic, again returned; the patient expectorated a great quantity of aqueous, reddish phlegm; the pulse very quick, soft and feeble.

On the morning of the following day (fourth day from the first attack) the pain in the side much relieved, but respiration is laborious; pulse more regular and not so quick; cheeks highly coloured; expectoration very copious, and received on linen, it resembles the reddish serosity generally discharged from sanious ulcers. *At nine in the morning, a drachm of cinchona in wine and water: ether potion, of which a spoonful is to be given immediately after the bark: at eleven o'clock, a repetition of the same medicine: at noon, two grains of camphor and three grains nitrate of potass in pills: these pills were to be continued every four hours.* At five o'clock in the evening, the eyes ap-

peared more brilliant; expression of speech short; respiration more free; the pain in the side no longer felt. At nine o'clock, great restlessness; cough dry; pulse quick, frequent, and small; heat of skin much augmented.

At eight o'clock in the morning of the fifth day, pulse more developed than on the evening before; the matter expectorated was gray, but the spots produced by it on linen were of a reddish colour. At seven in the evening, the pulse quick, but very weak; prostration of strength very great; the intellectual faculties disordered; unpleasant dreams during the night. *The same treatment.*

On the morning of the sixth day, *râle*. Death at six in the evening.

*Examination of the body eighteen hours after death.*—Effusion of reddish serosity in the left thoracic cavity; adhesion of the base of the lung to the diaphragmatic pleura of that cavity; the upper part of the viscus compact, but presenting a red colour, and a friable texture; the lower portion was equally firm, but of a brown slate colour; the right lung and pleura were of a livid slate colour, and their texture was flaccid and putrefied; puriform serosity ran out of the pulmonary parenchyma, but no ulcerated cavity could be discovered which could have furnished it; right cavities of the heart full of black blood; the liver of a flabby texture, of a slate colour, and friable; gall-bladder of the same colour; the tissue of the duodenum was soft in some parts, and its aspect gangrenous; the vessels of the omentum gorged with black blood.

The second case was that of a man, aged 34, drummer to the national guards of Troyes. He entered the hospital on the fourth day after the attack. The symptoms were very similar to those attending the case already described. M. Pigeotte ordered him a drachm of cinchona every two hours, with a spoonful of ether potion immediately after each dose. At five in the evening, increase of fever. *A grain and a half of kermes added to the potion.* The symptoms much aggravated during the night; great fullness of the vessels of the conjunctiva, &c. About nine in the evening his chest was wrapped in flannels steeped in camphorated liniment. The patient perspired very copiously in the night, and towards morning the fever began to abate a little.

On the fifth and sixth days, the same remedies were continued; the disease appeared to gain ground. On the seventh day he had epistaxis, and that, with a copious secretion of urine which came on at this time, relieved him very considerably. The patient continued to mend, and was convalescent on the fourteenth day. We may truly say that Nature cured the patient in spite of the doctor in this case. The other four cases recited by M. Pigeotte terminated fatally. The bodies were examined in two of them; and the thoracic viscera presented appearances very similar to those described in the first case. It is sufficient to notice that the treatment adopted in



these cases did not differ much in principle from that already described.

M. Pigeotte informs us that blood-letting was had recourse to in some cases, but that it generally proved ineffectual. This is by no means improbable, if the remedy was employed in the same manner as it generally is by our continental neighbours. In this country, as well as in any other country, English practitioners endeavour to put a check to acute inflammation of any vital organ, and particularly of the lungs, at the very onset of the disease, by the abstraction of from twenty to forty ounces of blood at its very commencement. Having done so in as short a period as possible, they lose no time in using other remedies of an active nature, and of known antiphlogistic character. The merest tyro would never neglect to use some active cathartic, in order to clear out the contents of the intestinal canal. Bleeding and purging, at the commencement of acute inflammation of an internal organ, constitute such a straight-forward practice among us, that no one ever forgets these whatever he may do afterwards, or however confined his views may be respecting the general nature of disease.

The practice of a French physician is very different in this respect. Instead of abstracting thirty or forty ounces of blood the very first day from a robust man who has inflammation of the lungs, if he bleed at all, he will perhaps abstract six or ten ounces the first day, and repeat the same quantity the second and third day, &c. We have witnessed this plan followed by some practitioners in this country, and have always had reason to consider it worse than useless, even in purely phlegmoneous inflammation. When the quantity of blood taken away at a time is not sufficient to give a decided check to the disease, it serves only to reduce the strength of the patient, while the malady is gaining ground as rapidly as if no blood at all had been abstracted. The patient may be in this way drained, day after day, of almost all the blood in his system, and the fluid will constantly exhibit the buffy coat to the very last, but the disease will regularly gain ground, and produce disorganization of the tissue, unless arrested by some other means. In epidemic inflammations this is more particularly the case. It may, perhaps, be said, without much impropriety, that, in diseases having a putrid tendency, the greater the mass of blood on which the malady has to feed, the greater will be the putrescency. Whether this constitute an explanation of the fact or not, experience proves that the abstraction of blood at the very commencement of the disease, in epidemic inflammation of the internal organs, prepares the system for the reception of internal remedies; and that, even when bark and other tonics become necessary in the course of the malady, their effects are much more favourable than if no blood had been previously abstracted.

In the cases related by M. Pigeotte, in the essay before us, the state of the alimentary and biliary secretions appears to have been

entirely disregarded. Those on this side of the channel who have the greatest aversion to the use of mercury, would not hesitate to administer a few mercurial purgatives in a disease bearing the characters of that described by the author. Judging from analogy founded upon cases similar to those whose history we have before us, we do not hesitate to give an opinion that, after a copious abstraction of blood immediately, or as soon as possible, after the occurrence of the attack, a very free administration of mercury would have proved serviceable in this epidemic. These remedies ought to have been assisted by leeches applied to the chest, and by blisters. Blisters were, certainly, applied in one or two instances, not to the chest, but to the *legs*!

The epidemic continued to rage with great virulence until about the 20th of February; but after that period it sensibly diminished, and it ceased altogether about the beginning of March, when the northerly wind had blown for some days without rain, and the atmosphere had become dry and clear. The mortality caused by it was very great: of 2650 inhabitants, forming the population of the district in which it prevailed, 120 perished. M. Pigeotte remarks that subjects possessing strong constitutions were no more spared by the disease than those whose constitutions were of the reverse character, and that death did not appear to make particular choice of his victims from those who had been previously reduced by illness, more than from among the robust. M. Pigeotte is of opinion that the morbid characters of the disease in this epidemic, such as the inflammation, mortification, general fever, stupefaction, &c., were neither the effects nor the causes of each other, but were all the effect of one cause, namely, the impression of an atmosphere, impregnated with deleterious effluvia, on the whole organization, and principally on the pulmonary organs. In this opinion we perfectly agree with him. This is probably the case in every epidemic where symptoms of internal inflammation or congestion make their appearance during the progress of the malady. It does not follow, however, from this circumstance, that the local affection should be totally neglected, and allowed to go on to produce mortification of important organs. It may be often necessary to support the system by nutritious diet, or even by tonics and stimulants; but we ought, at the same time, to employ remedies for subduing the local malady, as well, indeed, as the general affection. We may ask, upon what principle abstinence from food is enjoined, while bark, wine, and ether are given as fast as the patient can swallow them? If the system is to be supported, surely nutritious food forms the best support which it can have, and the least likely to aggravate the disease. By abstracting blood at the commencement of the attack, or as soon as the patient applies for relief, we certainly take away a portion of a diseased mass, and by then allowing a mild, nutritious diet, we do something towards supplying the remainder



of this mass with comparatively healthy materials. Experience has never yet favoured the supposition that bark and stimulants, in *acute diseases*, have the property of changing the whole mass of blood from the diseased into the healthy state.

Although we agree with M. Pigeotte, that all the anatomical characters of this malady were produced by the peculiar state of the atmosphere, and other circumstances connected with local situation and the season of the year, still we are not disposed to assent to the supposition, that all the structural changes observed on dissection took place simultaneously. The symptoms, as described by him, would lead us to infer that the primary affection of the pulmonary organs was *inflammation*, and that *gangrene* did not take place until a subsequent stage had occurred. In describing the symptoms, the author notices that the pain in the side of the chest was, at the *commencement* of the disease, acute. This acute pain subsided in the course of two or three days from the first attack, and expectoration of a sanious serosity came on. We should be inclined to attribute the acute pain, felt by the patient at the first onset, to inflammation, and the cessation of this pain to the termination of the inflammation in gangrene. The morbid condition of the lungs sufficiently supports this view; for, as much of the organ as was not in a gangrenous state was highly inflamed, firm, and friable. There is little doubt but that the mortified portions also had been in a similar state before gangrene took place. In fact, the morbid appearances described by the author, as forming the anatomical characters of this disease, appear to us to be perfectly analogous to those usually observed in gangrene of a limb, consequent on compound fracture, or any other local injury. The parts in which the inflammation first took place, or had been most severe, had run into mortification, and the rest were running their course towards that state, and some of them would, in all probability, have attained it, had the death of the patient not put a stop to the progress of the local disease.

Gangrene of the lungs is a disease so rarely met with, that scarcely any thing was known of its symptoms, or of its anatomical characters, before the celebrated and indefatigable Laennec gave a description of it, in his work on diseases of the chest. He informs us, that in the course of twenty-four years he only met with it twice; and that he only knew of five or six cases of it that had occurred in the Parisian hospitals during the same space of time. The disease described by Laennec under the term "uncircumcised gangrene," has nothing in common with that whose history M. Pigeotte gives us, but the gangrenous state of the lungs. In the cases related by the former, the local malady appeared to depend upon local or accidental causes; whereas, in the cases forming the foundation of the essay before us, the local disease was brought on by a general cause, and the malady pervaded the rest of the system as well as the pulmonary

organs. In M. Laennec's cases, the disease of the lungs made a gradual progress, and the patients survived under its influence for many days, or sometimes months; whereas, in the cases related by M. Pigeotte, the course of the malady was rapid in the extreme. To show the malignity of this epidemic in a still clearer light, we shall, in conclusion, translate one case more, in which the pleuro-pneumony terminated on the third day, in sphacelus of both lungs, and of some of the abdominal viscera.

A strong, robust, young man, was out at work on the 15th of February, during a very rainy day. In the evening, he was seized with a very violent shivering, to which succeeded great heat, intense cephalalgia over the eye-brows, pain in the throat, a suffocating pain in the side, and an inclination to vomit. On the morning of the second day, a neighbouring surgeon gave him an emetic, composed of two grains of tartarized antimony and twenty grains of ipecacuanha. The symptoms increased; the night was passed in low delirium and extreme agitation. *A large blister to the side, and to both legs.* The third day, the patient could scarcely breathe; the *r  le* had commenced; the pulse small and weak, very quick and irregular; the vital forces generally had sunk. Death took place at four o'clock on the following morning.

*Examination of the body ten hours after death.* The corpse exhaled a most fetid odour. Green and livid spots on the anterior and lateral parts of the neck, and under the hypochondria. A greenish tint of the skin covering the lateral parts of the thorax. Sores made by the blisters brown and black. The glottis and epiglottis presented gangrenous eschars, two or three lines broad. Both lungs and pleur   costales were of a slate colour, flabby, livid, and of a putrid appearance; the lungs were sunk in; their parenchyma was of a green colour, and they appeared as if they had been macerated for fifteen days. The fleshy fibres of the diaphragm were also brown and green; the peritoneum lining the abdominal muscles was of the same colour; those portions of it, also, covering the liver, stomach, and spleen, as well as the omentum, were in a similar state. The membrane was very soft and flabby. The gall bladder and stomach had lost their elasticity, and appeared sunk in, as in a putrefied body.

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*Inoculation of Horses and a Cow with Small-pox Matter.*—M. Hamont has recently practised in France those experiments which have been repeated in this country within the last few weeks.\* His experiments were attended with no other result than those local effects which arise from punctures with any irritating matter: these always disappeared after a few days, and nothing whatever analogous to small-pox took place.—*Journal de M  decine.*

\* Vide Journal of Foreign Medicine, vol. ii. page 212.



## Medical and Philosophical Intelligence.

*Amputation during the progress of Mortification.*—A paper on this subject by Dr. Bushe, is contained in the present number of the Journal of Foreign Medicine. The following case, translated from the *Journal Général, &c.* may be adduced as confirmatory of his observations. It forms the subject of a memoir read to the *Académie Royale*, by the late Professor Chaussier, to whom was submitted the examination of the question relative to the propriety of the operation—doubts, it appears, were entertained on this subject, and the payment of the fees of the surgeon was contested, because he had operated contrary to the established rules. After referring to the experience of some of the most eminent surgeons in France, particularly M. Larrey; and of Messrs. Hutchinson, Lawrence, and S. Cooper, in England; M. Chaussier decides in favour of the necessity of the operation, in cases of gangrene arising from an external cause, and of its propriety in the present instance.

M. Prilleux, æt. 28, fractured his left leg about its inferior third, by a fall from a horse; the soft parts were lacerated, and the extremities of the bones protruded. A surgeon was called, and reduced the fracture after the necessary preliminaries. Some days afterwards, gangrene took place in the wound, and spread rapidly to the adjoining parts. Dr. Labesse being called in, explained to the parents of the patient his dangerous situation; his pulse was small, the leg almost completely sphacelated, and amputation of thigh affording the only prospect of preserving his existence, it was accordingly proposed, and acceded to. The mortification spread so rapidly, that, during the space of an hour and a half, while M. Labesse was making the preparations necessary for the operation, it had extended more than an inch and a half. The operation was attended with entire success,—cicatrization being completed after the seventieth dressing.

*M. Lisfranc's mode of treating Chronic Abscesses.*—This gentleman has recently communicated to the *Académie Royale de Médecine*, a new method which he successfully employed in treating one of these abscesses of slow formation and great extent. It is well known that an opening made into such abscesses is almost always followed by an inexhaustible discharge of ill-digested matter, which eventually conducts the patient to marasmus and death. M. Lisfranc attributes these accidents to inflammation of the cavity of the abscess, which he resolved to avert, in the case under consideration, by the application of leeches. Immediately upon making an opening, twenty-five were applied above, and as many below, the abscess. The next day the pus was of good quality, and very small in quantity. The leeches were reapplied on the second, third and fourth days. On the fifth the parietes of the abscess were in great part united, the pus of good quality,

and the cure almost completed.—*Journal des Progres, &c.*

*Hydatids in the Palm of the Hand.* By Dr. MAUG, of Esslingen.—Wager, a vine-dresser, æt. 28, of a scrofulous constitution, had for a year past in the palm of his right hand, a tumour about six inches in length and one and a half in breadth. It began about the articulations of the ring and middle finger with the metacarpal bones, and soon extended into the palm of the hand, and subsequently as far as the middle of the forearm. There was no discoloration of the integuments, the tumour was entirely indolent, and gave a loud crackling noise upon pressure; its contents could be readily pushed either backwards or forwards, so that one half of the tumour remained empty. An incision was made about the middle of the tumour, and fifty hydatids were discharged, with about three ounces of inodorous serum. A probe readily penetrated as far as the articulations of the ring and middle finger, and posteriorly, beneath the annular ligament of the carpus.

At the same time that strong compression was made upon the extremities of the tumour, the orifice was maintained open, and during eight days more than a hundred hydatids were discharged. The secretion of serum having ceased, red wine was injected, and immediately afterwards strong pressure was made upon the whole surface of the tumour. In a little while, adhesion had taken place at its two extremities, but a discharge of a small quantity of serous matter still continuing, the injections were repeated, and after a lapse of three weeks the patient was able to resume his laborious occupation. Two months afterwards, during a catarrhal fever, the wound again opened, and about half an ounce of serum was discharged, unaccompanied with hydatids; the injection was repeated, with the same success as before.

The bodies discharged from the tumour were regular, and the greater number cylindrical in shape, the largest was about the size of a small haricot; one of their extremities was conical, the other compressed, so that they appeared to have been placed one against another, and to have formed a kind of chain; they were soft, elastic, of a milky white colour, and retained their size when compressed, permitting the escape of a small quantity of limpid serum which they contained in their cavity.—*Journal des Progres, &c.*

*On the effects of the vinous tincture of the seeds of Colchicum Autumnale.*—With many other Physicians, Professor Chelius bears testimony to the excellent effects resulting from this preparation in rheumatism and arthritis. Investigating the cause of these almost specific effects, he found, that during the use of the colchicum, the urine underwent a marked change, consisting in a striking augmentation



in the proportion of uric acid. The following is the result of the examination of the urine of a patient, affected with arthritic swellings of several of the joints, especially of the knees, which were almost immovable. Before the administration of the colchicum, the quantity of uric acid, both uncombined and in union with ammonia, amounted to 0.069. On the fourth, eighth, and twelfth days after the employment of this remedy, it had increased respectively to 0.076, 0.091 and 0.112, being almost doubled at the expiration of 12 days. Analogous results were obtained from the analysis of the urine of other arthritic patients.

Colchicum is successfully employed both in acute and chronic arthritis. Professor Chelius has never seen it produce any unpleasant effects; but caution is requisite in its administration. He commences with twenty or thirty drops in a little water, and gradually increases the dose till symptoms of gastric irritation are observable. This remedy is also productive of very salutary effects in different stages of prosopalgia, in sciatica, rheumatic ophthalmia, dropsies of the joints, and some species of paralysis of the lower extremities, not arising from an arthritic cause.—*Bull. des Sciences Médicales.*

*On a new Succedaneum for the Sulphate of Quinine.*—Bartolomeo Rigatelli, a chemist of Verona, states that he has discovered a preparation which will form an advantageous substitute for the sulphate of quinine; he has given it the title of *Salino Amarissimo Antifebrile*. A commission, appointed by the Academy of Verona, to investigate this article, has ascertained that it is derived from an indigenous vegetable, spread over all Europe; that it is obtained in large quantity by a simple process; that it is composed of an acid in combination with a vegetable alkali; and that it contains nothing deleterious to health. The salt is friable, has an earthy aspect, and brick red colour, and is bitterer and more astringent than the sulphate of quinine; it has scarcely any odour, or only a slightly herbaceous one; pulverised, it becomes white, and is then very soluble in water. Multiplied observations have proved, that it may be advantageously substituted for the sulphate of quinine, in all cases where the latter is indicated.—*Bull. des Sciences Médicales.*

*On Valves in the Pulmonary Veins.*—In all systematic works on anatomy, we find it asserted that the pulmonary veins have no valves. It is unnecessary to prove this by multiplied citations—Waller among the ancients, and Meckel as the modern writer, will suffice. The former says, in his *Elementa Physiologiæ*, t. i. p. 145, "Sed etiam vera pulmonalis absque valvulis est;"—and Meckel, in his *Human Anatomy*, vol. iii. p. 368, remarks that the pulmonary veins are usually without valves, with some very rare exceptions.

Professor Mayer's attention was first called to the valves in these vessels, by finding them very numerous and very large in the

pulmonary veins of the cow, although, on looking for them in swine, he found them absent.

In man, however, he found them, on examination, both large and numerous; so that it is difficult to understand how they should have escaped observation. A valve is always met with at the place where a venous branch joins the larger trunks at an acute angle; and the more acute this is, so much more marked is the valve. But where the branches join at a right angle no valve exists; which is precisely what takes place in the other parts of the venous system, as in the extremities, where valves exist where a branch joins the larger trunks at an acute, but not where this happens at a right angle. From this we see why it happens that fewer valves are met with in the pulmonary than in other veins; because the ramifications of the pulmonary veins chiefly take place at a right angle. This form of distribution is particularly the case in swine—and hence in their pulmonary veins there are no valves.—*Mayer in Zeitschrift der Physiologie.*

*On the Employment of Phosphorus as a Caustic.*—Dr. Paillard has lately written an interesting article on this subject. Reflecting on the rapidity with which phosphorus destroys the tissues to which it is applied, the doctor conceived the idea of employing it as a revulsive upon the skin, to remove chronic inflammations of the viscera, of the muscles, or joints. It is more convenient and quicker in its operation than moxa. A piece of phosphorus, about half the size of a lentil, placed on the skin and set fire to, produces great pain, cauterizes deeply, and to as great an extent, as an ordinary cotton moxa. Twenty seconds suffice for this operation. These new moxas may be made of all sizes; they can be applied in a greater or less number, one at a time, or all at once, according to the case in which they are employed. The author has applied twenty-four at once upon the loins, for the cure of a lumbago that had resisted all ordinary means. In a case of neuralgia affecting the thigh and ham, Dr. Paillard placed thirty small moxas from the tuberosity of the ischium to the tendo achillis; they were all lighted at the same time, and extinguished in fifteen seconds, each producing an eschar as large as a *five-sous* piece. The patient (who had not been able to get relief from cupping the whole extent of the limb) was quickly cured. The phosphorus may be also employed to destroy a diseased tissue, or to change the character of a wound or ulcer. Dr. P. says, that he has cured a woman 65 years of age, who had suffered for eighteen months from a cancerous wart under the lobe of the left ear, of the size of a very small pea; upon which a piece of phosphorus of about twice that size was applied; an eschar covered the little tumour, which was detached in six days, and the patient speedily cured. This method is very useful in those timid patients who are alarmed by the preparations for the common moxa;



for scarcely does this caustic begin to act before its operation is over, and yet it has as great an effect as that produced by the long-continued pain of the ordinary moxa, which becomes insupportable from the time it occupies.—*La Clinique.*

*Historical Note on the Origin of Syphilis.*—By Dr. BEER.—An opinion very common among physicians respecting the origin of syphilis is, that the Jews, who were expelled from Spain under the reign of Ferdinand the Catholic and of Isabella, were affected by that disease, and that they conveyed it to the other countries of Europe. C. Sprengel appears to approve of this opinion in his History of Medicine. Dr. Beer adduces some historical points which render this improbable, and to support them he notices a passage from Isaac Abarbanel, born at Lisbon, in the year 1437, a man of great learning, holding some important posts at the Court of Alphonso V. of Portugal, and author of a Commentary, in Hebrew, on the prophets of the Old Testament. In this work, the author remarks on an account given in the prophet Zachariah, where it is mentioned that a certain malady affected all those who fought against Jerusalem. This disease was called *Zarfosim*; he considers it to be the same as syphilis, and that it did not exist among the Israelites, but among those who fought against them.

Very little reliance can be placed upon an inference like this. It is well known that the genital organs are subject to a variety of diseases, and as long as we have no regular description of the characters of those ancient maladies, we cannot with any propriety conclude that they were identical with those of the present day. There is even at the present period some difference of opinion respecting what is syphilis and what is not; what dependence can then be placed upon the result of a comparison drawn between modern syphilis and an undescribed disease which existed between two and three thousand years ago?—*Bull. des Sciences Medicales.*

*Nervous Delirium—Efficacy of Opiate Clysters.*—M. Dupuytren gives the name of *nervous delirium* to a condition which seems much to resemble the *delirium tremens* of practical writers. This form of delirium, which is unaccompanied by fever, often takes place without there being any wound or inflammation; so that it cannot be looked upon as always a traumatic affection. It likewise occasionally comes on after every different kind of wound, and at every period of inflammation—nay, even when the cicatrix is forming—so that it is difficult to point out any specific cause of the disease. Individuals of what is called a nervous temperament, however, are more obnoxious to it than others; and it would seem that those who are much afraid of any operation which they undergo, and still more those who are desponding, suffer from it more frequently than those of greater mental equanimity.

The attack is marked by restlessness; some degree of incoherence; then follows a singular confusion of things, persons, and places, and the patients are occupied day and night with some fancy generally connected with their previous habits and pursuits. They give themselves up to violent and constant movements, which have no object, and abundant perspiration covers the body; the eyes look brilliant and injected; the face becomes flushed, and the expression animated; and the individuals are very loquacious, or even vociferous. Sometimes they are merry, and sing aloud, manifesting no sign of pain.

Notwithstanding these symptoms, the pulse remains quiet; there is no fever; the natural evacuations take place as usual, but there is no appetite; and at the end of from two to five days the disease terminates, sometimes fatally, but more frequently in the recovery of the patients. When recovery takes place, the change is sudden; the patients falling into a profound sleep, as if exhausted by fatigue. From this they awake in ten or fifteen hours, sensible and alive to pain; the appetite returns, and the original disease, whatever it may have been, goes on as before the attack. Sometimes the delirium returns two or three times, and leaves the patient weaker after each accession.

Although the *nervous delirium* may become very dangerous of itself, and although M. Dupuytren has seen some patients (particularly one young man, of robust constitution, in whom it had supervened in consequence of a simple bruise on one of the toes) sink under it in forty-eight hours, without the affection which had given rise to it appearing to contribute towards the fatal event; still he regards its severity, in general, as proportioned to that of the disease which it accompanies. Thus it is much more to be dreaded when it supervenes upon a fracture of the extremities, or of the ribs, or after large wounds, than when it comes on after simple injuries, not in themselves dangerous. Post mortem examination discovers nothing which can explain the phenomena.

Sedatives of every kind, including large doses of laudanum, bleeding to syncope, and all the usual means, have appeared to M. Dupuytren altogether ineffectual—neither arresting the progress nor changing the course of the disease. But a remedy which has always succeeded in M. Dupuytren's hands, and to which he attaches an almost specific effect, is the injection every six hours, and repeated two, three, or four times, of enemata, containing eight or ten drops of tincture of opium in a small quantity of any convenient vehicle. These injections will generally remove the most furious delirium. M. Dupuytren attributes their efficacy to the opium being absorbed from the rectum without undergoing any digestive process; for, as already mentioned, laudanum given by the mouth fails to do any good.—*La Clinique.*

*Effects of Animal Charcoal in Indurations of the Lymphatic Glands.* By Dr. GUMPERT.



About a year ago it was stated in the public papers, that M. W. a physician, had discovered a method of dissipating engorgements of the glands attended with induration; to this announcement I gave no more attention than to the many others with which the public is continually deceived; such was not the case, however, with a man in my neighbourhood, who, seduced by the promises of Dr. W., confided himself to his care. For twenty years this man had had a swelling of the parotid, which had acquired the size of a child's head. He brought me a letter from Dr. W., in which this gentleman stated that his remedy was no other than animal charcoal, from the use of which he said he had derived unquestionable advantage. In preparing this charcoal, he uses common butcher's meat, but especially beef or veal, the fat is entirely removed, and about one-third weight of bone is added; this mixture, divided into small portions, is exposed to the fire in a suitable vessel until it is carbonised, when it is powdered and kept for use. In administering the remedy, Dr. W. mixes an ounce and a half with two drachms of sugar, and of this directs morning and evening, a quantity equal in size to a lentil. Persons in health subjected to the action of this remedy, are attacked with painful engorgements of the mammary and salivary glands, which soon disappear spontaneously; sometimes, also, an eruption of red pimples appears upon different parts of the face, the nose, forehead, &c.; the vascular system is equally stimulated, indicating the necessity of caution in its administration. This substance in no degree impairs the appetite, it even excites it when it is habitually wanting. Such is the information contained in the letter of M. W. Dr. Gumpert subjoins to what he has above stated, that the patient to whom he owes the communication of the letter, having been scrupulously subjected to the treatment of M. W. experienced a manifest improvement after the lapse of three months; the skin covering the tumour was not so tense as before, and had acquired a more natural colour. I cannot deny, observes M. Gumpert, that animal charcoal exerts a manifest action in cases of lymphatic engorgements; I have twice employed it with success in scrofulous swellings of the glands of the neck; it has been necessary, however, to raise the dose in adults to half a drachm (gros,) and even a drachm, two, three, and even four times a day, and it has been given in this quantity, till the increase of the frequency, and the fulness of the pulse, admonished me to discontinue it.--*Rust's Magazine*.

**Cold Affusions in Croup.**—This practice has lately been recommended, as highly useful in the last stage of croup, when the strength of the patient is exhausted; the following case recently published by Dr. Schmidt, is favourable to this method of treatment. A lad, at. 10, living in great indigence, had a violent attack of croup on the 22d of November, 1826; medical assistance was not procured till the evening of the 24th. At this period he had a

croupal cough; wheezing respiration; pulse small and hard, beating 130 per minute; his countenance had a bluish aspect; a cold and profuse sweat covered his body, and the extreme anxiety which he experienced, indicated a very speedy termination of his sufferings. Ten leeches were directed to the neck, a blister plaster, mercurial frictions, and the fourth of a grain of tartarized antimony every eight hours; a pseudo-membrane of a cylindrical form was expelled by vomiting, and the patient had one alvine evacuation. On the following morning there was an aggravation of all the symptoms; imminent suffocation, absence of cough during the last nine hours, a sensation of pain in the middle of the thorax, the pulse extremely feeble, could not be counted, and the patient had fallen into a state of stupor. It was at this period that recourse was had to cold affusions. Two measures of water, at 10° Rheumer, were employed in the first instance, and sprinkled upon the whole dorsal part of the trunk, from the neck to the sacrum; during this operation the cough recommenced, and another cylindrical portion of membrane was expectorated, followed by some albuminous flocculi. From this moment there was a mitigation of all the symptoms, but this was of brief continuance, and after the lapse of an hour, they re-appeared with the same intensity as before. The affusion was again employed with the same success as in the first instance, and the melioration was almost equally transitory; it was necessary to recur three times to the same remedy, after which the condition of the patient progressively improved during some time, and then remained stationary; the mother of the child refusing to permit its further employment. An aggravation of the symptoms again took place, and it was nothing less than the return of the former danger, that could overcome the opposition of this woman to the use of cold water; but it was then too late; it could only defer, for a time, the fatal event, which took place on the second day of the treatment. Notwithstanding the unfortunate termination of the disease, we cannot overlook the remarkable influence exercised upon it by the cold affusion.\*—*Rust's Magazine*.

**Pregnancy.**—The increased activity of the circulation in the parturient state, has been long known, and the cause has been sought for in the necessities of the fetus, while, at the same time, it has always been attempted to restrain this augmented activity within proper limits, by the evacuation of a fluid, in these cases, more fibrinous and more abundant than ordinary. No one has hitherto proved that there existed in this state, a modification of the circulatory organs themselves. From observations made by M. Larcher upon a great number of women who have died at different pe-

\* A case analogous to the above is contained in the Journal of Foreign Medicine, Vol. I. page 374.



riods of pregnancy, or shortly after delivery, it follows, that in almost all the subjects thus circumstanced, there was an evident hypertrophy of the left ventricle. According to Laennec, the parietes of this ventricle ought to have a thickness rather more than double that of the right. From the investigations of M. Larcher, it appears that this proportion is almost constantly augmented during the puerperal state, and that this augmentation varies from a fourth to a third of its diameter. The right ventricle and the auricles preserve their natural thickness; the left only, becomes thicker, firmer, and of a more vivid red. Whether the hypertrophy be viewed as the cause or the effect of the plethora, it is evident that it must impart to the circulatory movement, an energy which accounts for all the accidents of pregnancy. This assertion of M. Larcher is one of great interest, and calls for further researches on the part of those physicians, whose situation enables them to make post mortem examinations in puerperal cases.—*Archives Générales de Médecine*.

*Polypus of the Heart.* By M. RIGACCI.—A woman, labouring under disease of the heart, supposed to be an aneurismal dilatation of the left ventricle, after having been subjected to a variety of treatment, died on the 18th December, 1827.

On dissection, besides several unimportant peculiarities, a body of a fleshy appearance, and resembling what is known under the name of sarcoma, was found in the left ventricle. This cavity was much dilated, and its parietes uniformly thinned and distended. From the interventricular septum arose the root of the morbid production just mentioned, which was also attached to the columnæ carneæ of the heart, by means of other radicles. Another root arose by two peduncles from the valvular apparatus of the auriculo-ventricular opening. These two roots soon united, to form a rounded body, two inches, and as many lines in length, terminating in a fringed extremity; it appeared not to have any membranous envelope. On its exterior were observed three reddish lines, which arising from the columnæ carneæ, were continued upon the morbid production, and lost themselves in its substance. Examined with a good microscope, they were seen filled with a reddish fluid, and ascertained to be blood-vessels; their nature was placed beyond doubt by the injection of mercury into two of them; a rupture took place in one at the distance of an inch from the introduction of the tube; the other filled completely, and could be seen ramifying into the substance of the polypus. Upon close examination, the polypus was found to be composed of three or four fibrous layers, superposed upon each other, and intimately connected together. In this case it is evident, 1st, That the polypus was organized and endued with a proper life; 2d, That its formation was long anterior to death, of which it was the cause and not the effect.—*Antologia Firenze, Febbraio, 1828*.

*Perspiration after Death.* By Professor SPERANZA.—A lady, æt. 20, of a robust constitution, was attacked by acute encephalitis, which terminated fatally on the fourth day. The rapidity of her death, and the symptoms which had preceded it, having induced a belief, upon what foundation it is difficult to determine, that the disease was contagious, Dr. Speranza was directed by the civil authority to examine the body. Twelve hours had elapsed since her death, when the Professor made his visit. The whole surface of the skin, which was still warm, was covered by a profuse perspiration, particularly upon the face, where it formed inodorous, viscid, and limpid drops. It was also very apparent upon the neck, chest, and extremities, but less so, than upon the face. From the latter part it was wiped away several times by Dr. Speranza, with a fine linen cloth, and he plainly saw it reproduced, little by little, upon the parts which had been thus dried. The experiment was repeated upon different parts of the body, and the same phenomenon was observed. It was performed with a similar result by the assistants and by Dr. Negri, physician to the hospital of Parma.

Twenty-four hours after death, the body was entirely cold; the face and neck were still covered by a visible perspiration, but it was no longer observed upon the other parts of the body. A peculiar fætor began to be exhaled, and this sign of putrefaction left no doubt of the reality of death.

Several analogous cases are quoted by Dr. Speranza, from the *Ephémérides des Curieux de la Nature*. He supposes that this cutaneous exhalation, which has always been observed a few hours after death, is due to the action of the capillary system, which still subsists for a longer or shorter time, but that when it continues after the body has become cold, it may be attributed to the disengagement of gas, which takes place when the putrefactive process commences, and occurs in the fluids as well as in the solids. In proportion as these elastic fluids are disengaged, they act by their expansive property upon the large blood-vessels, propel their contents into the capillaries, and thus occasion the transudation upon the surface; so that a phenomenon, which in the first instance originated from a remnant of life existing in the circulatory organs, owes its continuance to the exclusive influence of chemical and physical forces. We may cite as examples of transudation after death, the numerous cases of the exhalation of blood, which have occurred one or two days subsequently to that event; in these instances the exudation is the sole effect of putrefaction.—*Opere Mediche Moderne Italiane, tome VI. Bolog. 1827*.

*New Method of Treating Idiopathic Dilatations of the Iris.*—M. Demours, in the name of a commission, read to the Académie Royale, a report upon a memoir, by M. Serres, of Uzès, entitled *De la cauterization de la Cornée, pour corriger d'une manière prompte et sûre les alterations de la vue avec dilatation des pupilles*. In this memoir, M. Serres pro-



poses to treat idiopathic paralysis of the iris, unaccompanied by a morbid condition of the retina or optic nerve, by the application of nitrate of silver to the cornea, near its junction with the sclerotica. In those cases where the retina preserves its sensibility, and injury of the ciliary nerves has diminished or annihilated the alternate motions of the iris, the preternatural dilatation thence arising, is ordinarily obviated by placing before the affected eye, a card, or some similar substance, having a minute perforation in its centre, by means of which, the light is rendered more supportable, and objects more distinctly visible, than without such assistance, especially when placed near the eye.

M. Serres is aware that irritants externally employed, have a special influence in these cases. The electric and galvanic spark, and frictions upon the globe of the eye with a small silver file, followed immediately by the introduction within the lower eyelid of an acrid liquid, a strong cold infusion of tobacco, for example, suddenly induce contraction in the pupil, accompanied with a copious flow of tears. The lachrymal nerve, and the filaments supplying the conjunctiva, being excited by these three means, employed almost simultaneously, the shock is communicated to the ciliary nerves; the pupil almost invariably contracts, so as to recover, in great measure, its natural diameter, and the patient is enabled to read for a few moments, after which, the pupil resumes its previous state of dilatation, preserving, however, some traces of its temporary contraction.

According to M. Serres, the nitrate cannot be applied indifferently to the cornea or sclerotica, experience having proved that the latter is less capable of communicating the irritation thereby excited, to the iris and retina; the cornea, on the contrary, has more numerous connexions with these parts, and it is usual to see increased sensibility of the retina, and contraction of the pupil, accompanying ulcerations of this membrane. The remedy should be applied near the circumference, rather than the centre of the cornea, for two reasons; in the first place, experience evinces that its effects are more prompt; and secondly, we thus avoid the production of a superficial albugo, which, in certain cases, continues for several days, to the disquietude of the patient. Four cases are related in attestation of the efficacy of the plan.

The committee appointed by the Academy have tried the remedy, and bear witness to its utility; three cases in which it was successfully employed, have occurred in their own practice. The application should not continue longer than a second, and the irritation should be carried to the extent of inducing lachrymation, followed towards evening, by a slight injection of the vessels of the conjunctiva. The light cloud which appears on the cornea rarely continues beyond a few days. We may assure ourselves of this fact, by destroying the transparency of the cornea of a living rabbit, by means of slight cauterization, so as to simu-

late a general albugo; on the next, or succeeding day, the membrane will be found nearly as transparent as before. The plan has been tried unsuccessfully in amaurosis, and M. Serres thinks that it can only be usefully employed in idiopathic paralysis of the iris; in those cases where the ciliary nerves, or some other ramifications of the third and fifth pair are alone affected.—*Journal Général de Médecine*.

*Sulphate of Quinine*.—M. Bally, physician to the Hôpital de la Pitié, has ascertained, from a long series of experiments and observations, relative to the sulphate of quinine, that this remedy independently of its anti-periodical effects, possesses a marked sedative property upon the circulatory system. He has been induced, therefore, to employ it not only in intermittent, but also in continued fevers, and even in gastro-enteritic inflammations. In the case of a young man, labouring under acute gastro-enteritis, with tenderness of the epigastrium, intense redness of the tongue, continued fever, &c. &c. we saw him administer this remedy in quantity of a drachm, in the twenty-four hours, and effect in a few days a reduction of the pulse, from 75 to 36 pulsations in a minute.—*Nouv. Biblioth. Médicale*.

*Singular effect of Cantharides*. By J. DURET.—A blister was applied upon the thorax of a man, æt. 50, towards the conclusion of an attack of peripneumonia; some days afterwards, an ulcer made its appearance upon the corona glands, about six lines in breadth, accompanied by inflammation of the interior of the prepuce, some degree of phymosis, and by a plentiful secretion of purulent mucus, furnished by the ulcer, and the sebaceous follicles of the diseased organ. A cure was effected by the application of a dilute solution of the acetate of lead.

I should not have suspected any connexion between the application of a blister and the ulceration of the glans, had it not been for the case recently published by Dr. Ammon,\* which proves, from its conformity with the present, that they stand in the relation of cause and effect. The same result has been likewise observed in the horse.—*Journal Universel des Sciences Médicales*.

*Extirpation of the Right Labium*. By Mr. YOUNG.—A lady, æt. 39, married, and mother of several children, of a delicate habit, had suffered much inconvenience, during the last seven years, from an enlargement of the right labium pudendi. Upon examining the tumour, I found it as large as an ostrich's egg, in shape pyriform, of the hardness and weight of schirrus. There was no enlargement of the glands in the groin. Under these circumstances, I determined to remove it, and the operation, which was performed in the pre-

\* Journal of Foreign Medicine, Vol. I. page 283.



sence of Dr. Naylor, consisted in cutting through the base of the tumour, with a single stroke of a broad knife. One or two small branches of the arteria pudendi externa required ligature. The tumour was found to weigh two pounds; when cut into, it resisted the knife, and was almost cartilaginous. The wound has healed remarkably well, and the lady is now almost recovered.—*Lond. Med. Gaz.*

*Partial Hydrocephalus Externus cured by an Operation.* By Professor TEXTOR.—The patient, æt. ten months, had, situated upon the anterior fontanelle, a soft elastic tumour, which made its appearance seven weeks after birth, and from the size of a pea, had progressively attained that of a goose-egg. The tumour was shining, transparent, had a large base, could not be moved from side to side, and did not yield to pressure. Around its circumference, the osseous margin of the fontanelle could apparently be felt by pressing firmly with the fingers; the temperature and colour of the tumour were not different from the adjoining parts. The swelling had always been unaffected with inflammation, pulsation, or pain; the strongest pressure occasioned no uneasiness; the child was lively, in good health, and presented no symptom of imbecility. Some degree of constipation had existed for the last three weeks, and there had been several slight convulsions. The disease having been determined to be partial hydrocephalus externus, a puncture was made, on the 13th of March, with a long, lanciform cataract needle, from which issued a great quantity of perfectly limpid serum; when about half the contents of the tumour had escaped, the wound was closed by adhesive plaster. No unpleasant symptoms followed the operation. April 27, the tumour not having sensibly filled, a second puncture was made, and a great quantity of serum discharged, in every respect similar to the first. All the fluid was evacuated by a puncture made on the 14th May, and immediately afterwards a slight convulsion supervened, which, however, did not recur. The fourth and last puncture was made on the 14th July; the tumour, though the fluid was entirely evacuated, still appeared to contain something, and upon enlarging the opening and making slight pressure upon it, about a spoonful of a soft pulpy matter, not unlike overboiled rice, made its escape; a tent was inserted into the wound, and the whole dressed in the usual way. Without any evident cause, the child was attacked, on the first of August, with slight convulsions and vomiting, which soon yielded to an anodyne mixture; two days after, the wound, which had become fistulous, was opened throughout its whole extent, and the cavity filled with lint; the dressings were removed on the sixth, and gave exit to a considerable discharge of coagulated blood and pus. By the 17th, the cicatrization was completed.—*Journal des Progres, &c.*

*Medical Effects of Hydrochloruret of Lime.*  
—From the accounts recently published re-

specting the influence of this substance in destroying animal effluvia, Dr. Reid was induced to make trial of its efficacy in neutralizing the morbid poison generated in the fever which prevailed epidemically in Ireland in the year 1826, if such poison really had any existence. It was, however, in some bad cases of dysentery that he first prescribed the hydrochloruret. He directed ten grains to be added to the common enema, and to be administered to the patient night and morning. The factor was corrected, and the discharges became much more natural. Another form in which he frequently prescribed the hydrochloruret, with the very best effects, was in combination with tincture of columba, ten grains to two drachms, mixed with four ounces of water, sweetened with sirup, and exhibited in the proportion of half an ounce every hour. "From the observations which I have made," says Dr. Reid, "of the efficacy of this medicine, in cases which exhibited all the severe symptoms of that disease which medical writers have denominated yellow fever, I can with confidence recommend it as a valuable remedy. Indeed, I am induced to expect, that when properly employed, the hydrochloruret of lime will be found as valuable a remedy in the treatment of yellow fever, as mercury has proved in syphilitic disorders."—*Dublin Hospital Reports.*

*On the different Medicinal Properties of Peroxide and Protoxide of Iron.*—Iron is one of the most valuable articles of the materia medica. The PROTOXIDE acts as a genial stimulant and tonic in all cases of chronic debility not connected with organic congestion or inflammation. It is peculiarly efficacious in chlorosis. It appears to us that the PEROXIDE and its combinations are almost uniformly irritating, causing heartburn, febrile heat, and quickness of pulse. Many chalybeate mineral waters contain an exceedingly minute quantity of protocarbonate of iron, and yet exercise an astonishing power in recruiting the exhausted frame. We believe their virtue to be derived simply from the metal being oxydized to a *minimum*, and diffused by the agency of a mild acid through a great body of water, in which state it is rapidly taken up by the lacteals, and speedily imparts a ruddy hue to the wan countenance. We find that these qualities may be imitated exactly by dissolving three grains of the sulphate of iron and sixty-one of bicarbonate of potass in a quart of cool water, with agitation in a cool vessel.—*Lond. Med. and Surg. Jour.*

*Preparation and Properties of Aluminum.*—On these subjects the following statements are made by M. Woehler. The method of preparing aluminum is founded upon the inoxidability of this metal by water. When an attempt is made to heat chloride of aluminum with potassium in a tube, the action is so strong and the extrication of heat is so considerable, that the apparatus is instantly broken. I therefore employed a small platina crucible, the



cover of which was kept on by a wire of the same metal. At the moment of reduction, the crucible became intensely red-hot, both within and without, although it was but slightly heated; the metal of the crucible was not sensibly acted upon. The operation may also be effected in a porcelain crucible with a cover attached. Some small pieces of potassium of about the size of a pea, and not more than ten at once, are placed in the crucible, and upon them are put an equal number of pieces of chloride of aluminum of the same size; the crucible is to be heated with the spirit-lamp, at first gently, and afterwards more strongly, and until the spontaneous incandescence of the matter ceases. Excess of potassium is to be avoided; for after it was oxydized, it would dissolve a portion of the aluminum. The reduced mass is generally completely fused, and is of a blackish-gray colour. When all is cold, the crucible is to be thrown into a large vessel of water; a gray powder is soon deposited, which, when looked at in the sunshine, appears to be entirely composed of small metallic plates; the powder is to be washed with cold water and then dried: it is the metal of alumina.

Aluminum somewhat resembles platina in powder. I discovered some scaly coherent particles, which had the colour and splendour of tin. Under the burnisher it readily assumes the appearance of this metal; rubbed in an agate mortar, it seems to be a little compressible, and unites into larger scales, with a metallic lustre; and it leaves in the mortar traces of a metallic appearance. When heated in the air, until it is ignited, it inflames and burns with great rapidity; the product is the white oxide of aluminum in a hard mass. Reduced to powder and blown upon in the flame of a candle, each particle suddenly becomes an inflamed point, the splendour of which is not less than that of the sparks of iron burning in oxygen gas. In pure oxygen gas aluminum burns with so dazzling a light, that the eyes can scarcely bear it; the heat generated is so considerable, that the oxide produced is partly fused. The particles which have been fused are yellowish, and as hard as corundum; they do not merely scratch, but they cut glass. In order that aluminum may burn in oxygen gas it must be heated to redness.

Aluminum is not oxydized by water, and this fluid may spontaneously evaporate from the metal without its being in the least tarnished; when however the water is nearly at its boiling point, the metal is slowly oxydized, and hydrogen is liberated.

The sulphuric and nitric acids when cold do not act upon aluminum; when heated, concentrated sulphuric acid readily dissolves it, and without the evolution of sulphurous acid; the sulphuric solution did not by evaporation give the smallest crystal of alum.

Aluminum introduced into a solution of caustic potash, even when weak, dissolves readily, and with the evolution of hydrogen; the solution is perfectly clear; the same solution takes place in ammonia; and it is surprising to

observe how much of this earth the ammonia is capable of uniting with: the evolution of hydrogen is similar to that with potash. When aluminum is heated to dull redness, and exposed to a current of chlorine, it inflames and is converted into chloride, which sublimates as fast as it is formed.—*Hensman's Repertoire de Chimie.*

*Corydalin*.—A New Vegetable Alkali.—According to M. Wackenroder, this alkali is contained in the root of the fumitory (not the common fumitory, *fumaria officinalis*, but the *fumaria cava*, and *corydalis tuberosa* of Decandolle.) The dry root is to be coarsely powdered and digested for some days in water; filter the infusion, and precipitate with excess of potash; dry the precipitate and treat it with boiling alcohol, until it ceases to dissolve any thing. It sometimes happens that during the cooling of the alcohol, crystals of corydalin are deposited. The solution is to be evaporated to dryness, and the residuum is to be dissolved in weak sulphuric acid; this solution is then to be decomposed by an alkali either caustic or carbonated. A white deposit is formed, which by drying becomes of a light gray colour.

Dry corydalin soils the fingers very much; it is insipid and inodorous. It is soluble in alcohol; and this solution when hot and saturated deposits colourless prismatic crystals of a line in length. By slow spontaneous evaporation, fine laminae are formed. The solution acts as an alkali upon vegetable blue colours. At a temperature below that of boiling water, it melts into a deep green-coloured fluid, which, when solidified, has a crystalline texture, and is transparent in thin laminae. At a higher temperature it yields water and ammonia, and is converted into a transparent brown mass. Æther dissolves corydalin with the same facility as alcohol; caustic potash dissolves it in considerable quantity.

This alkali forms extremely bitter salts with acids; sulphuric acid forms two different salts; one which crystallizes is obtained when the acid is digested with excess of base; the solution is to be filtered and evaporated: the production is very slightly soluble in water. When a small quantity of sulphuric acid is added to a solution of corydalin in alcohol, so as not to saturate the base perfectly, a portion of crystalline matter is deposited; and there remains a stratum of a greenish transparent substance, which is unalterable by exposure to the air, and readily soluble in water: the solution reddens litmus paper slightly; an excess of acid renders it purple, and eventually blackens it. Nitric acid when diluted and cold dissolves and forms a colourless solution with corydalin; but when heated it becomes of a red colour, which, when the solution is concentrated, becomes of a blood-red colour. This action is so strong, that by the aid of heat the smallest quantity of corydalin may be discovered in a fluid. Muriatic acid forms with this alkali an uncrystallizable salt; acetic acid is still more difficult of combination with it than sulphuric



acid; but it forms a crystalline salt, which may be re-dissolved a second time in water and crystallized. Tannin is one of the most sensible tests of corydalin, as for all other vegetable bases. The precipitate is white when the solution is dilute, and grayish-yellow if concentrated.—*Hensman's Repertoire de Chimie.*

*Test for Nitric Acid and its combinations.*—Pour a solution of protomuriate of iron upon the surface of an amalgam of zinc, and then place a crystal of nitre upon the latter in the fluid; a dark band immediately forms around the crystals, sometimes extending over the whole surface of the mercury. All the nitrates, as well as nitric acid, act in this manner; but other salts, as the chlorate, produce no effects of the kind; so that a very sensible test of the presence of nitric acid is thus afforded. It is necessary that the solution employed be a protosalt of iron. If nitric acid is supposed to exist in a liquid, it should be saturated with potash, evaporated to dryness, and the dry mass tried. Of course, salts of copper or of silver must not be present.

When an amalgam of brass is used instead of zinc, those effects are not produced; which M. Runge considers as a proof that the zinc or brass is combined, *chemically*, with the copper.—*Annalen der Physik*, 1827, p. 479.

*Analysis of Cancerous Tissue.* By M. COLLARD DE MARTIGNY.—The following are the results, obtained by this gentleman from the analysis of a gramme\* and ninety-five centigrammes, of cancerous tissue, transmitted to him for examination, by Professor Cruviellier. Albumen, 0.206, gelatine, 0.021, fatty matter, 0.020, traces of phosphorus and salts, water 1.700.

This result is considered by M. Martigny as confirmatory of the opinion which he promulgated about twelve years ago, that cancer was an hypertrophy of the cellular membrane.—*Jour. de Chimie Medicale, &c.*

*Principe immediate de la Dentelaire.*—M. Dulong announces that he has discovered a new crystalline principle in the dentelaire (leadwort), *plumbago Europæa*, Lin. It appears in the form of very minute acicular crystals, of a golden yellow colour; it is partly soluble in water, but more readily in alcohol and sulphuric ether; its colour is not affected by acids; by the alkalies and the subacetate of lead, it is changed to a crimson red. Applied to the tongue, it produces a burning taste, as acrid as that of the root from which it is derived, and which continues for a considerable time. It appears to be neither acid nor alkaline, but a principle sui generis, and much disposed to separate by crystallization from the black extractive matter with which it is mixed.—*Archives Générales de Médecine.*

\* A gramme is 15.4441 grains troy; a centigramme 0.15444.

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